

Volume 1, Book 1



CIVIL AIR PATROL
MANUAL, vol. I

→ Book I.

CIVIL AIR PATROL

1 AUGUST 1949

CIVIL AIR PATROL MANUAL

B. K. I →

An Introduction to Civil Air Patrol,
an Auxiliary of the U. S. Air Force



VOLUME 1, BOOK I

CIVIL AIR PATROL

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TO THE READER

There is something in this volume for people of all interests. Aviation requires understanding, not only among those who serve it directly in the air and on the ground, but among all Americans, since all have a great stake in putting this force to the best use for mankind.

Civil Air Patrol, an auxiliary of the United States Air Force, is the only organization chartered by Congress to advance aviation in all of its phases--both military and civilian.

Interest is invited in the whole program. But those who care to turn their minds only to a part of it are welcome. To strengthen any part of the complex structure of aviation is to strengthen the whole.

This manual accordingly is designed so that those who use it may focus on the parts they most want to apply, though it is hoped that in the process their interest will be drawn to other parts.

Book I, Civil Air Patrol Manual, has to do mainly with the military phases--the organization of the armed services and the work that CAP is prepared to do in military or civil emergency.

Book II, Aviation Study Manual, is strictly about aviation theory and practice, with no more than passing reference to its military aspects.

Book III, Instruction Manual, is an instructors guide, for teaching the subject matter covered in the other two books.

Thus, a school or youth group not in a position to teach military subjects may use Volume II freely, with or without help from Civil Air Patrol. The manual is a public document. The more widely all such information is spread, the better for aviation.

Civil Air Patrol stands ready, however, to cooperate in any way that it can be of service, especially through its CAP Cadet Program which teaches young men and women character building, military courtesy, and leadership, to supplement its preflight aviation courses.

With Air Force cooperation, CAP conducts a nation-wide volunteer organization open to men and women of good character. There is much patriotic work in CAP not only for flyers, and those with other aviation skills, but to citizens without previous aviation experience.

Since air power requires many kinds of specialized knowledge--radio, photography, weather, science, and just plain common sense--it has much to offer to any American willing to meet with congenial people in a worthy activity.

Here is the story of this war-born organization, in relation to the Air Force and the system of civil aviation which it serves.

LUCAS V. BEAU
Major General, USAF
National Commander
Civil Air Patrol.



ACKNOWLEDGMENT

We wish to express our sincere appreciation to all who have contributed so willingly of their time and talent in the development of this series of Civil Air Patrol Manuals, Books I, II, and III.

Committees composed of Civil Air Patrol members, Air Force Reserve Officers, Civil Air Patrol National Headquarters and liaison personnel, as well as prominent private citizens have worked diligently to produce a finished product which, in addition to its introductory value will serve as the basis for future expansion and improvement. For their foresightedness as well as their individual and collective efforts we are truly grateful.

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UNIT I

CIVIL AIR PATROL

What it is and what it does.

PURPOSE

Civil Air Patrol was founded on 1 December 1941, to mobilize civilian aviation skills and equipment for the war effort. Now a federally-chartered volunteer organization and an auxiliary of the United States Air Force, it maintains quasi-military units throughout the United States and Territories to promote aviation in all of its phases, civilian and military. Its program is threefold.

1. As a training corps, CAP senior and cadet members continually train in aviation, military, and related subjects, and perform practice missions.

2. As an Air Force auxiliary, CAP supports Air Force aims in every way possible, including support of civil aviation which is a big part of total air power.

3. As a lightplane air force in itself, CAP performs flight and ground missions in military or civilian emergencies.

These functions are inter-related. Training is fundamental to all, as it is the means of preparing civilians to serve in disciplined units. The aim is not only against a future war; it is immediate in that CAP members almost anywhere may be called at any time to apply their skills for relief, search, or rescue.

In brief, CAP is a reserve of skill and of equipment. When CAP was formed just before World War II (as told under "Historical Facts") the entire aim was to utilize civilian resources without drawing anything from the hard-pressed military.

Since the war, surplus material for training and operations has been distributed throughout the Civil Air Patrol. The effect is to sow seed from which the Federal Government will reap great returns in man-hours of unpaid work, backed by civilian equipment, facilities, and funds . . . all for the cause of AIR POWER as PEACE POWER.

ORGANIZATION AND ACTIVITIES

For these aims, Civil Air Patrol is organized under a National Commander and National Headquarters Staff, with a liaison office at each CAP Wing Headquarters. This small staff is made up of Air Force personnel.

Otherwise the organization consists of unpaid civilian volunteers. There is a Wing Command in each of the 48 States, the District of Columbia, Alaska, Hawaii, and Puerto Rico.

Each Wing Commander, appointed by the National Commander and subject to his orders, commands all the CAP personnel in his State or Territory, organized in CAP Squadrons and Flights (sometimes also in Groups). The Wing Commanders by law may exercise control over CAP but they delegate much authority to the U. S. Air Force whose Chief of Staff appoints a General Officer as CAP National Commander.

Membership is open to American citizens of good character, both men and women. Senior members are 18 or more; cadet members 15 to 17 inclusive. CAP officers are appointed in commissioned and non-commissioned grades. The senior units in each wing may form attached units of CAP cadets.

The CAP Cadet Program is the main peacetime activity of Civil Air Patrol, for an enrollment quota of 100,000 young men and women. The typical CAP unit meets at least once a week for drill and instruction, in which senior and cadet members may hold separate or combined sessions.

CAP does not give flight training, a job for private enterprise, but gives preflight courses and takes cadets aloft for orientation flights. All members are encouraged to learn to fly on their own initiative. Many CAP units have raised flight scholarship funds for outstanding cadets.

Flying Clubs are formed within CAP so that several members can share expenses of one plane.



Figure 1-1.--CAP: A lightplane air force.

Airplane model building and flying play an important part in activities of the cadets.

Flying activities at civilian airfields are designed to develop proficiency in the kind of missions that would be flown in war or in civil emergency. Privately-owned and rented planes and surplus Air Force liaison-type planes are flown.

Ground organization utilizes the resources of private operators for maintenance and fueling services. To be a self-contained "lightplane air force," CAP maintains its own specialist personnel.

Many special skills such as photography, rifle marksmanship, first aid, and others needed in a military air organization, have been brought into CAP by professionals or gifted amateurs, while the CAP training program develops new skills.

A nation-wide radio network, operating on special frequencies both for communication between State Wings and for local operations and practice, gives CAP its own communications system, of great value in emergency.

Air Force Reservists may apply for assignment as CAP unit instructors and receive official reserve credit. These reservists, and other veterans enrolled in CAP, convey much war-won experience to their fellow members and cadets. CAP thus is brought in close relationship to the reserve, vital for quick mobilization on which success in modern war

demands and becomes in itself a further line of reserve.

Cooperation is maintained with the states, both in education and emergency service to aid the National Guard and other state agencies in time of need. CAP cooperates with the Red Cross in disaster relief and mercy missions; with the National Rifle Association in marksmanship; and with many other established private and governmental agencies.

Support to civil aviation and flying safety includes air marking projects and air-age education.

Routine support of the Air Force is maintained in such work as public relations, to convey understanding of air power; in observances and events such as "open house days" at airfields; and in recruiting when needed.

State-wide and national activities of CAP, made possible by the year-round routine of local units, include encampments, reviews and inspections. Summer encampments are held for CAP cadets at Air Force bases each year.

International activities include the annual exchange of selected cadets with cadets from similar organizations in Canada, England, and several European nations.

Civilian emergencies met by CAP volunteers, both in flying and ground duties, include relief in disaster areas after flood,

high winds, isolation by snow or ice, explosions, and conflagrations. Medical aid has been flown and victims evacuated. Lost planes, persons, and boats have been found. Usually CAP members fly at their own expense without compensation or reimbursement.

Active military missions in peacetime include missing aircraft search, for which Air Force funds are available to pay for fuel and lubricants, but not for plane rental or for the time of pilots and observers.

In World War II, CAP flew anti-submarine coastal patrol, border patrol, military courier service, tow-target, and missing aircraft search. The CAP recruiting effort was an important source of Aviation Cadets, many trained in the CAP cadet program. There was no draft exemption in CAP. Most members could not qualify for military service due to age, disabilities, or essential civilian employment. But many awaiting military service were drilled and trained in their home CAP units.

Preparedness in event of another war. CAP units kept in readiness by civilian emergencies, could expect not only to take part in a similar national effort, but would have even greater responsibilities. In view of the certainty of widespread destruction and sabotage in the United States, if war comes, the use of CAP's air and ground units for anti-sabotage patrol and many other vital duties is of inestimable importance. In many areas, at the outset, no other organized force will exist.



Figure 1-2.--Nazi subs took cover.

CAP can quickly move into disaster areas as no other volunteer organization can do.

IT IS A PROGRAM TO BE DEVELOPED IN EVERY LOCALITY

LEGAL AUTHORITY

Civil Air Patrol was created on 1 December 1941, a week before Pearl Harbor, by executive order of the Director of Civilian Defense, pursuant to authority in the War Powers Act. Subsequent orders confirmed and further defined the status of Civil Air Patrol as a division of the Office of Civilian Defense. Its state and local units had legal being as "committees" of OCD.

CAP was transferred to the War Department from OCD, with all its previous authority and organization intact, by Presidential Order of April 29, 1943. By subsequent Army instructions, CAP functioned during the war under the Commanding General of the Army Air Forces. It continued for a time after the war under the War Powers Act, then still in effect.

A federal charter was granted to Civil Air Patrol by unanimous vote of the Senate and

the House of Representatives, by Act of 1 July 1946 (Public Law 476, 79th Congress). The charter authorized CAP to organize civilians and their equipment for advancement of aviation in all of its phases. All authority held during the war, including the right to wear Army uniforms and insignia, was confirmed. The membership of CAP was defined as that at the time the charter law passed. Control of CAP was vested in the 48 State Wing Commanders then serving, and named by name in the act, or their successors. The Wing Commanders have delegated some of their functions to the Air Force.

Air Force Auxiliary status was confirmed by Act of May 26, 1948 (Public Law 557, 80th Congress) after the National Security Act of 1947 had created the U.S. Air Force under a Department of its own. This act specifically authorized the Air Force to make surplus equipment available by gift or loan, to permit utilization of facilities, to furnish gasoline and

oil, to maintain national and state liaison offices, and to detail personnel to assist the CAP program.

Air Force Regulations and Letters and CAP Regulations govern military phases of CAP, while authority under the charter is defined by the CAP Constitution and By-Laws the text of which appears in the Appendix to this book.

CAP's annual report to congress, required by the charter, is given at a dinner each spring in Washington, when each Wing Commander invites his state delegation of senators and representatives.

CONCEPT

The success or failure of any unit of Civil Air Patrol will depend largely on how well the officers and members understand the over-all purpose. Each reader is asked to stop at this point; consider the foregoing text; and think what a completely functioning CAP program can mean to the nation.

A main strength in the program is that work on any part of it can contribute to the whole. Its military functions aid civil aviation and its civil activities aid the military.

At the outset of the war, the whole aim seemed to be in preparation for active missions such as the coastal patrol. It was hard to build interest for any other purpose. But the forming of units to prepare men for active CAP missions developed a training corps which could be more widely useful. Recruiting and pre-training of young men for the Air Force hence became a nation-wide job which continued after the active flying missions were no longer needed.

To maintain this work, in turn, CAP's volunteers were led to help keep airports open and even to build new airports and facilities. Hence, CAP aided the postwar resumption of civilian flying.

In peace, the order is reversed. Placing of emphasis on civilian flying is likely to be of more year-round interest than the possibly remote aim of military emergency. Civilian emergencies give an added reason for unit readiness.

Activities change through the year. In the winter, there may be snow or ice rescue missions to vary the routine of drill and study; in the spring, floods; in the spring and fall, forest fires; in the summer, encampments



Figure 1-3.--In peacetime, floods.

and mobilizations; at any time, lost plane searches or special emergencies.

Even where the unit, like a fire department without a fire, has no trouble to meet, practice missions can be made realistic. Time which might otherwise be spent in aimless Sunday flying thus may serve the cause of civilian and military preparedness.

Just as civil air activities build resources of military value, so the non-flying work in a wide variety of related fields is just as much a part of aviation as the flying. While the aim of CAP is to spread aviation and military knowledge as much as possible, there is room for many people who prefer to do other useful things. Some may be interested in the welfare and training of young people; some in radio, marksmanship, photography, or first aid. Hobbies, like amateur craftsmanship, may be highly useful to a CAP unit that wants to build its own club house at the airport, or to make display cases for its training aids.

Since many organizations are successful from the standpoint of only one of these interests, the variety of action which CAP offers should attract and hold a following under proper leadership.

It took a long time for the concept of CAP to develop. At the outset, many pilots who wanted only to fly were impatient with ground activities or drill and disinclined to train cadets.

Even today, a classroom of young people and adults studying some such subject as weather or lightplane engines seems far removed from modern air power with its huge bombers and its fast jets and rockets. But the superior home-taught knowledge of young people is America's weapon which wins mechanized wars. Unhappily, now, much of the added military training previously needed only by combat forces must be spread widely among the entire civilian population.

Each member can be proud of what CAP was in war and what it is today. But no member should feel satisfied with his own performance, or that of his unit, as long as there are deficiencies which can be corrected. There is a place in CAP for the unskilled to learn and for the skilled to convey their knowledge to others. Many veterans, trained at great expense, will be over-age for future combat. It costs some \$30,000 to train a combat pilot, for example, and he is "old" for it before he is 30. But the nation will get further return on its investment if some of this information is planted in the growing minds of young people, as well as among adults who can advance air power more by knowing more.

There is only one personal reward that can be guaranteed from this service. Any member of Civil Air Patrol will meet and work with a group of people who care enough about their country to devote some of their free time to its advancement and defense. To those who are like-minded, this affiliation is a reward worth the effort.

THE NATIONAL BOARD OF CAP

Civilian Control. The policy of the United States is to place civilian officials in charge of each of the military departments. The civilian character of Civil Air Patrol was recognized in its Congressional charter which placed control in the hands of the 48 men who were then (in 1946) serving as Wing Commanders, and their successors.

The Constitution and By-Laws ratified and adopted by the Wing Commanders on 28 May 1948 pursuant to the charter, defines how the control shall be exercised.

The National Board of Civil Air Patrol as so defined, consists of the state and territorial Wing Commanders, who number 52 as this is written, and 9 members at large, one for each of 8 regions of the United States. The ninth member serves as Chairman of the Board. The Board has power to control the affairs of CAP.

The National Executive Board selected by the National Board from its membership, consists of 8 members who elect one as chairman and hold general powers between sessions of the whole National Board, usually not convened more than once a year.

The Secretary of Air Force or his designee (the CAP National Commander) was delegated the powers of the National Board and the National Executive Committee. These groups continue as advisory bodies. The National Board adopted a resolution to this effect, not irrevocably, on 28 May 1948, reserving the right to set up an Appeal Board of 5 Wing Commanders to hear any cases involving the removal of a National Board member.

MILITARY COMMAND

The CAP National Commander, who shall be an Air Force General Officer by the terms of the 1948 resolution above noted, is in the dual capacity of commanding Air Force personnel assigned to CAP duties, and commanding the quasi-military CAP organization of civilian volunteers.

On the military side, he reports to the Chief of Staff, U. S. Air Force, through prescribed staff channels. (For information regarding

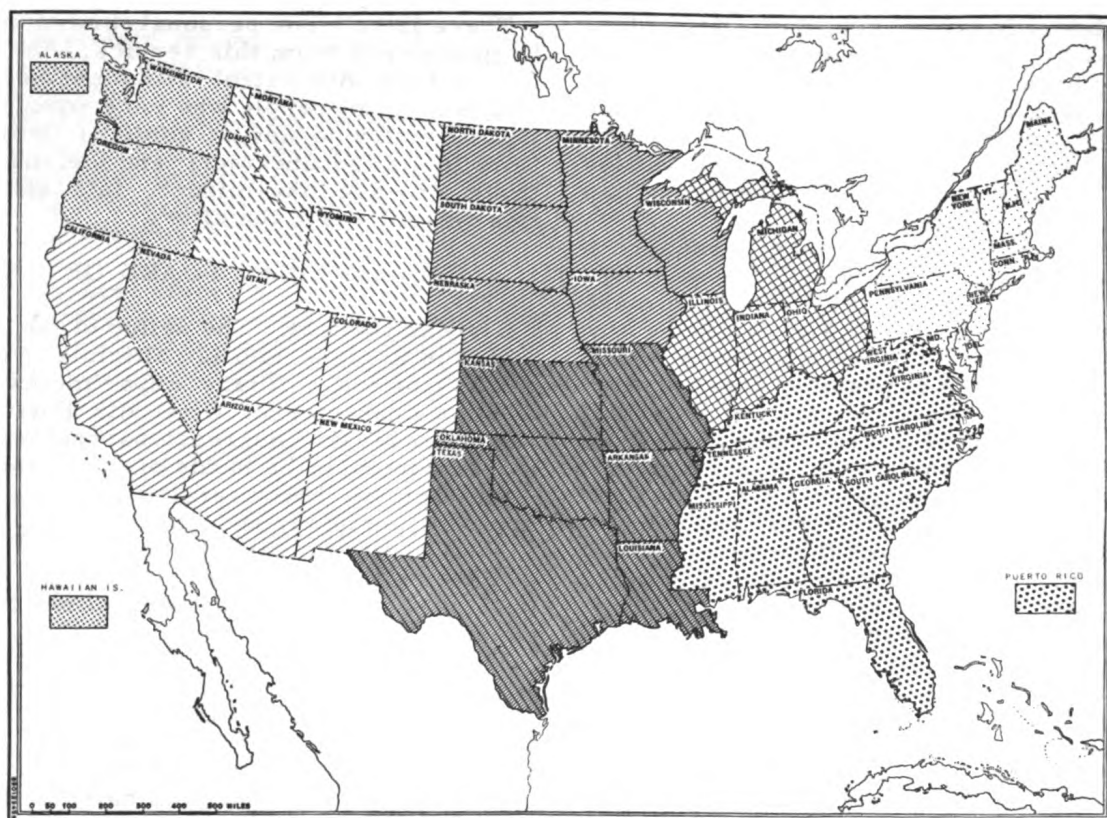


Figure 1-4.--Areas of responsibility for CAP Executive Board members.

the top military establishment, see Unit III.) On the quasi-military, he consults the National Board and National Executive Board.

The CAP National Headquarters is organized as the Headquarters and Headquarters Squadron, CAP-USAF, at Bolling Air Force Base, Washington 25, D.C. It is a small unit of Air Force officers, airmen, and civilian employees, with a Deputy National Commander, Chief of Staff, Adjutant, and the usual staff sections (Supply, Training, Communications, etc.).

During the war, the principal duty of the national staff was to administer the active flying missions such as coastal patrol and courier. In peace, its main task is to encourage the formation and activity of CAP units, and to administer a continuous training program.

CAP regulations, orders, and letters are issued by national headquarters by command of the national commander to govern details of procedures both by Air Force and CAP personnel. The regulations are numbered by the same method of indexing the Air Force uses.

Air Force liaison personnel are assigned outside national headquarters. In each CAP

Wing Headquarters, there is an Air Force liaison officer, who reports to national headquarters. His job is to assist and advise the CAP Wing Commander in the CAP program throughout the wing. He is assisted by an airman, usually a sergeant, and a civilian stenographer. Office facilities are provided by the Air Force. The liaison officer is accountable for Air Force property assigned to the wing, including aircraft.

QUASI-MILITARY COMMAND

Aside from assigned Air Force personnel, the CAP organization consists entirely of unpaid civilian volunteers with their own officers and chain of command.

The CAP Wing Command in each of the 48 states, the District of Columbia, Alaska, Hawaii, and Puerto Rico includes all CAP members in its area functioning under a wing commander appointed by the national commander. The wing commander appoints the wing staff and the commanders of subordinate units, which he may establish or disestablish. The subordinate unit commanders in turn appoint their staffs and the commanders of units under them.

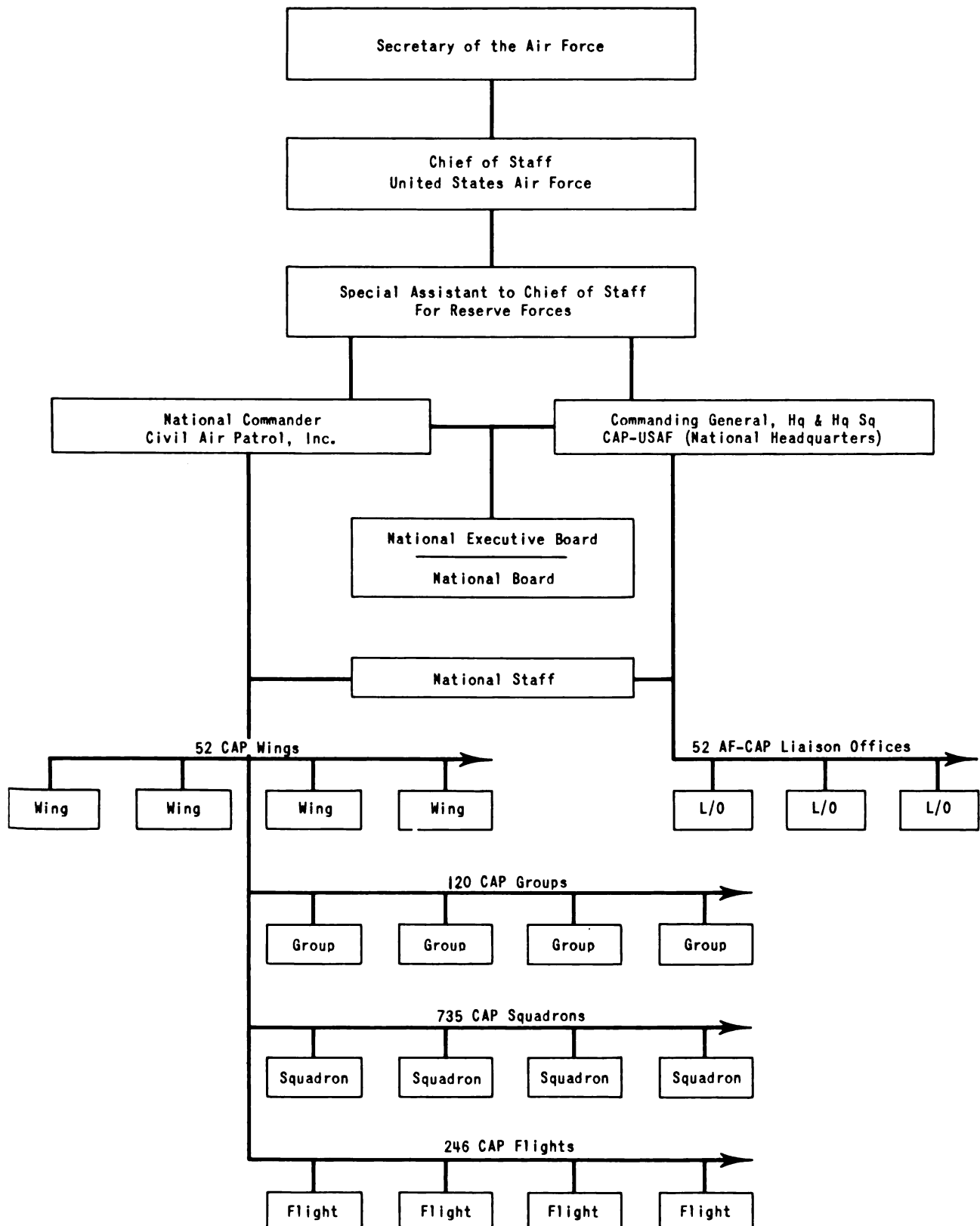


Figure 1-5.--Organization of the Civil Air Patrol.

Groups consisting of two or more squadrons, each with a group commander and group staff may be appointed in the larger wings. In most wings, the squadrons and separate flights report direct to wing headquarters.

The CAP Squadron is the basic unit, consisting of from 51 to 121 senior members (plus attached cadet members) under the squadron commander. Through the squadron staff, in which CAP officers are assigned to special duties such as supply, training, operations, administration, communications, etc., all necessary flying and ground functions are administered. Thus the CAP Squadron should be a complete and self-sufficient operating unit, ready to meet an emergency with all needed equipment and specialist personnel.

Flights, of from 15 to 50 senior members, each headed by a flight leader and assistant flight leader are organized as parts of squadrons and may be further divided into sections. In communities where there are not enough members to form a full squadron, flights may be organized on their own, to report directly to the wing or group command rather than to a squadron.

The chain of command goes from national commander consecutively to wing, group, and squadron commanders, and flight leaders. Each is responsible for all the CAP personnel under his command and all CAP or Air Force property in the custody of his unit. CAP

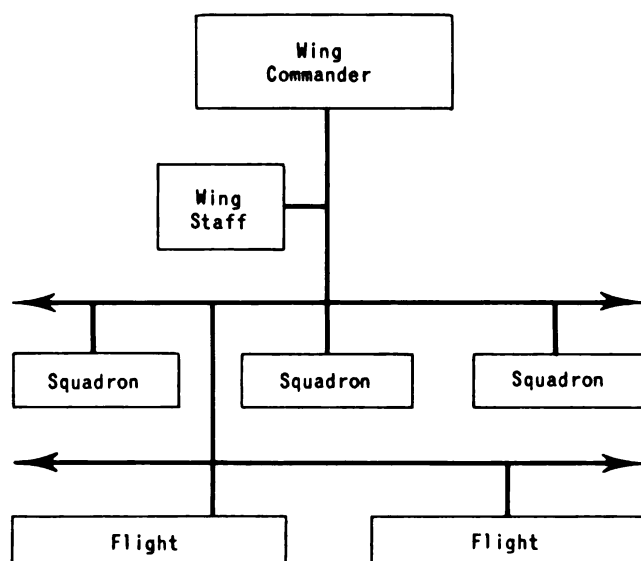


Figure 1-7.--Organization of a medium or small wing.

channels for orders and communications up or down the line, follow this chain.

Cadet units are attached to senior units as described in Unit II.

MEMBERS AND OFFICERS

Eligibility for membership in Civil Air Patrol is open to citizens of the United States and its Territories, both men and women, who apply through local units. Approval of the unit commander is required for membership. Minimum age for senior members is 18. For information about cadets, young men and women of 15 to 17, see Unit II.

Each applicant must make out a detailed application, accompanied by photographs and fingerprints, for FBI Identification. After clearance, CAP issues a membership card. The application form includes a pledge to serve loyally in CAP and follow the commands of its officers. A member may resign at any time or may be placed on an inactive status.

CAP officers are appointed by national headquarters on recommendation of wing commanders, who in turn are advised by subordinate unit Commanders. Grades are from 2d lieutenant to colonel. Warrant officers and non-commissioned officers may be appointed within the wings.

Concurrent status in one of the armed services, National Guard, or Reserves may be held by a CAP member and call to such service takes precedence over CAP duties. CAP rank has no relation to that held in any other service.

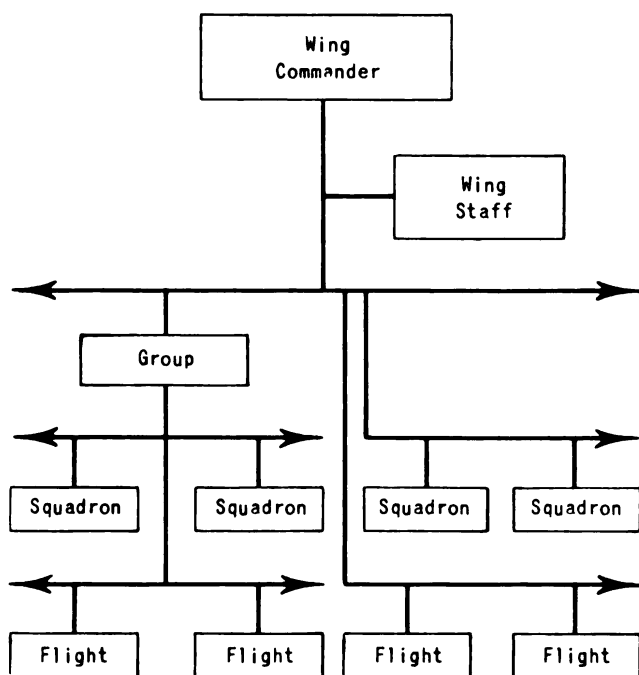


Figure 1-6.--Organization of a large Wing.

UNIFORMS

By the Congressional charters, CAP members are permanently granted the privilege, won in wartime, of wearing World War II military uniform garments with distinguishing CAP insignia. Main differences include the silver CAP in place of the US on Army uniforms, silver buttons, and a silver wing and propeller device in place of the gold and silver of the Air Force. The authority includes insignia of grade, up to colonel, as used by the Air Force and Army.

The CAP shoulder patch is a primary distinguishing feature worn at the top of the left sleeve on all outer garments, one-half inch below the shoulder seam. It is the emblem of the wartime Office of Civilian Defense, a white triangle on a blue circle with a red 3-bladed propeller in the triangle. The emblem was registered internationally during the war so a CAP member on active duty, if captured by the enemy, would be treated as a prisoner of war.

Caps. Silver CAP officers' cap insignia with enameled emblem is worn on the regulation officers' service (visor) cap. Officers may also wear the garrison (overseas) cap with proper designation of rank. Senior enlisted members wear either the service cap (visor) with CAP enameled metal disk or the garrison (overseas) cap without braid and with enameled or cloth CAP insignia. Female officers or enlisted personnel wear the garrison (overseas) cap.

Minimum uniform will consist of regulation army officers khaki or chino shirt; chino trousers or skirt; a tan web belt with plain brass buckle; tan shoes with plain toes, tan socks, tie, and overseas cap.

Wearing of uniform is required by all senior members when participating in military ceremonies or formations of an official nature. The use of the uniform at other times is optional except that it will not be worn while engaged in employment not connected with CAP activity. (Illustrations in Appendix.)

INSIGNIA

The following insignia have been approved by the Civil Air Patrol for use by its members. Proper insignia must be worn on the authorized uniforms at all times.

Officers' insignia. Silver CAP cutout letters instead of the gold "U. S." will be mounted on the right side of the shirt collar and on each side of the blouse lapel. Insignia of rank, regulation Army type, will not be worn without the CAP label designation.

Silver buttons, stamped with the CAP emblem will be worn in lieu of regular Army gold buttons. Silver wings and propeller insignia will be worn in lieu of Air Force gold and silver wings and propeller insignia on the officers' uniforms when the service coat or jacket is worn.

Enlisted personnel. Enameled insignia with the Civil Air Patrol three-bladed propeller emblem will be used for either the garrison or overseas cap. Chevrons are regulation Army type and are mounted on both sleeves halfway between the elbow and the shoulder. Collar insignia requires silver CAP cutout letters centered on both sides of the collar of the service coat or jacket.

DECORATIONS, AWARDS AND BADGES

All decorations and awards are approved by the National Commander of the Civil Air Patrol on personnel orders published by national headquarters. Recommendations for awards begin with the citation of the individual concerned by his immediate commanding officer, who forwards the necessary information to national headquarters for consideration.

When worn, decorations, service ribbons, badges and special insignia are worn on the service coat or jacket or on the shirt when worn as an outer garment. They will not be worn on the overcoat.

How worn. Service ribbons, awards, and badges are worn on the left breast in order of precedence from right to left of the wearer in one or more rows. They may be either sewed or attached by means of a bar. If more than one row is necessary, succeeding rows will be placed below and parallel to the first row with a space of 1/8 inch between rows. Not more than one service ribbon of any decoration or award will be worn on the uniform. A miniature bronze Oak Leaf Cluster or similar decoration will be worn on the appropriate ribbon of any decoration to represent each additional award of that particular decoration.

Aviation badges. CAP pilots and observers wings will be worn on the left breast above the service ribbons, if any. Aviation badges earned while serving in the Armed Forces of the United States or allied nations may be worn immediately above the right pocket of the service coat or jacket and immediately above the right pocket of the shirt when worn as an outer garment. Awards from other agencies--all decorations, awards, badges or special insignia earned through qualification and given by competent authority to CAP members for service performed in any branch

of service of the U. S. or its allies may be worn on the Civil Air Patrol uniform as prescribed in AR 600-40.

Decoration for Senior Members

The National Commander of CAP has the authority to award decorations to senior members for superior performance of their duties. These awards include:

1. Distinguished Service Award--This decoration is given for heroism and exceptionally meritorious service in a duty of great responsibility that has contributed in a high degree to the successful accomplishment of the Civil Air Patrol mission.

2. Exceptional Service Award--Senior members who distinguish themselves by exceptionally meritorious conduct in the performance of outstanding service are awarded this ribbon. Such service must be clearly exceptional. Superior performance of the normal duties of a position will not alone justify this award.

3. Meritorious Service Award--This decoration is given to senior members who distinguish themselves by particularly excellent service or by accomplishment less than required for the exceptional service award.

Service Ribbons for Senior Members

Wing commanders are authorized to award service ribbons to senior members of the Civil Air Patrol in recognition of honorable volunteer service. The national commander will award such ribbons to the wing commanders for distribution. Only the highest service ribbon which a member has received will be worn.

1. Blue Service Ribbon--This honor is awarded to senior members who have performed at least 2,000 hours of honorable volunteer service in the Civil Air Patrol program, and who have been members in good standing for at least 6 years.

2. White Service Ribbon--After senior members have served at least 1,000 hours of honorable volunteer service in the Civil Air Patrol over a 4-year period they receive this service award.

3. Red Service Ribbon--This ribbon is given to senior members who have been members of the Civil Air Patrol in good standing for at least two years and performed at least 500 hours of honorable service.

Any award, decoration or service ribbon previously authorized by national headquarters, and awarded to any member of Civil Air Patrol, may continue to be worn,

but such award, decoration, or service ribbon will no longer be authorized for future awards.

Insignia of Technical Specialists

Technical specialists are authorized insignia for wear centered on the outside half of the right sleeve of the service jacket, or shirt when worn as an outer garment. The following specialists insignia are authorized for qualified senior members:

Mechanic--Meshed gear and pinion.

Musician--Lyre emblem.

Photographic--Camera emblem.

Radio--Letter "R" surrounded by flashes of lightning.

Transportation--Wheel and winged hand emblem.

Insignia of Active Duty Service

Senior members who have served on CAP active duty in war time operations may wear the following insignia:

Anti-submarine coastal patrol--Submarine and bomb emblem.

Courier--Winged feet emblem.

Missing aircraft search--Winged binoculars emblem.

Southern liaison patrol--Cactus with letters "LP".

Tow target and tracing--Sleeve target and crossed searchlight beam emblem.

Active duty service stripes are authorized for wear for each period of six consecutive months of official service or 180 non-consecutive days of official service in CAP war-time operations.

Aeronautical Ratings

Senior members of the Civil Air Patrol are authorized aeronautical ratings after complying with prescribed training and other necessary requirements. The CAP flight program is designed to build an adequate pool of qualified pilots and observers to meet requirements for flight services and emergency missions.

1. CAP Pilot--Civil Air Patrol pilots are volunteer members who have completed ground flight training and hold a CAA Private Pilot's license.

2. CAP Senior Pilot--This rating is awarded senior members of the Civil Air Patrol with 2 years' service and 1,500 hours of certified pilot time. ACAA private pilot's license is also required.

3. CAP Command Pilot--Senior members holding a CAA private pilot's license, and

with 4 years service and 2,500 hours of certified pilot time, may wear the Command Pilot's badge.

4. CAP Observer--After ground and flight training as an observer a senior member of the CAP may be awarded this aeronautical rating.

5. CAP Glider Pilot--Active CAP senior members who are qualified by the CAA as glider pilots and who fulfill other standards established by the wing commander will be authorized to wear Glider Pilot wings.

More complete details covering the qualification and wearing of aviation badges are covered in the 50 Series of current Civil Air Patrol Regulations.

Illustrations of insignia, badges, etc., appear in Appendix.

FUNDS AND PROPERTY

Funds of Civil Air Patrol are principally from local contributions and the proceeds of local CAP events, held by the respective units to aid in the local program. State funds have been granted to some wings. There are no federal funds currently available. Plans have been made for the raising of national funds to finance activities for which the federal aid, in the form of staff assistance and equipment, can best be backed by private donations. The Charter and bylaws permits assessment of CAP members to defray expenses of National or other worthwhile projects of CAP. Donations to CAP are deductible from income tax returns as gifts. Money spent by members in CAP work may be deducted.

Property owned by the various units of Civil Air Patrol includes that received from federal surplus, private gifts, and items bought by CAP funds. Other property is held on loan from the Air Force and other sources.

Each squadron furnishes gasoline, oil, and performs light maintenance during the period it is using the aircraft. The entire complement of light planes within a wing is also available for use during local or regional emergencies affecting the public welfare. Liaison officers are authorized a 2-engine transport type aircraft for administrative work.

Air Force and surplus materials are available to CAP. The CAP is offered countless items of obsolete and surplus equipment for increasing the efficiency and realism of the entire CAP training program. In the classrooms the CAP instructors use actual Air Force engines and related aviation equipment. Their teaching is easier because they may show students just about every important aircraft component part used by modern aviation. Later, members work with the equipment themselves and gain valuable aviation knowledge and skills first hand. This class of AF equipment is largely inoperative and is employed entirely for classroom instructional assistance.

Communications equipment supplied the CAP, however, is fully operative and is used for both instruction and as part of the nationwide CAP communication network established for emergencies.

Other Air Force training aids, including films, film strips, and other visual aids, together with charts and mockups, are furnished.

Aircraft on loan. Light, single-engine aircraft of the L-4 or L-5 variety are assigned to each wing to help carry out orientation and familiarization flights for Civil Air Patrol cadets. The aircraft are loaned to individual squadrons at the discretion of the wing commander, and the AF-CAP liaison officer.

HISTORY AND BACKGROUND

FOUNDING OF PATROL

Civil Air Patrol was formed in 1941, as its first general order stated, "out of the desire of the civil airmen of the country to be mobilized with their equipment in the common defense."

These airmen had much to offer. There were more than 100,000 civilian pilots, a like number of student pilots and ex-pilots, and many citizens of related skills. A privately owned fleet of some 25,000 planes was operating from 2,500 airfields which were bases for hundreds of flight schools and air services.

Forerunner movements were started in 1940. In 1941 national associations as well as many state and local groups were formed. As war clouds gathered, it was plain to civil air leaders that civil aviation, unorganized, was in danger of being grounded for the duration.

Unrestricted flying of private planes was seen as cluttering the interceptor board and as a menace to military traffic, for which the air had to be cleared. It was deemed an unwarranted use of war materials and a possible means of sabotage and espionage.

On the positive side, the value of small airports and light-plane flying to aid the military in recruiting and training was little recognized. Air power still was not widely understood as a vital weapon and the importance of nation-wide civilian support was not established.

A few leaders could foresee that the only hope of continued flying during the war was to organize the civil airmen under voluntary discipline, and to make them useful enough to outweigh the objections.

As units began to organize under private or state auspices, it was further seen that a single unified system would be the only means of applying the needed wartime controls. Representations were made in Washington, but the agencies concerned, under heavy pressure for prewar adjustments affecting big airplanes, reached no conclusion about the little ones.

OFFICE OF CIVILIAN DEFENSE

When the Office of Civilian Defense was organized, however, the airmen were able to appeal to an agency responsible for the very problems of volunteer mobilization on which they were working. An OCD committee of Guy P. Gannett, Gill Robb Wilson, and Thomas H. Beck, all civil air enthusiasts, was appointed. They drafted a broad program, including not only a corps of adult flyers but a youth movement to develop pre-trained recruits for air duty. Officials were not ready to consider the youth phase which was laid aside until a year later.

Meanwhile, the state and local groups already formed were becoming sufficiently active to demonstrate both the willingness of civil airmen to organize and the need for central coordination lest these "private armies" get out of hand. After months of negotiation, the Departments of War, Navy, and Commerce approved an Air Division of OCD.

More weeks of anxious waiting followed, as restrictions on private flying closed in, and complete grounding still was thought by many to be the only answer. Gill Robb Wilson worked on initial regulations, application blanks, and selection of State Wing Commanders.

At last, the formal order for creation of Civil Air Patrol was signed on December 1, 1941, less than a week before Pearl Harbor. By this scant margin, the civil airmen won their chance to serve; otherwise, it seemed that almost all private flying activities would have been suspended.

When war came, there was no grounding of planes except, later, in a restricted area along the coasts. Pilot licenses were suspended until a loyalty check could be made. Then qualified civilians could fly much as before.

Checked by FBI

At hundreds of airports in every state pilots and air-minded people signed the application blanks of Civil Air Patrol, and registered their fingerprints for FBI check, so the government could be sure they could be entrusted with wartime duties.

Maj. Gen. John F. Curry was the first National Commander of CAP. Gill Robb Wilson, a civilian, was Executive Officer. Col. Harry H. Blee was Training Officer.

The newly-appointed 48 Wing Commanders were called at once to Washington for briefing. They returned to their states to appoint Wing Staffs and Group Commanders. The latter, in turn, appointed subordinate Squadron Commanders, so, as the flood of applications were approved in Washington and identity cards issued to members, local groups could be organized.

The first task was one of training. As the Training Officer sent forth a series of initial directives, the units began to drill and study. Flight practice under discipline was encouraged to ready the pilots for active missions.

For many, this was a brief preliminary to the armed services. Many a CAP squadron had continual turnover in the early months of the war, to stabilize finally in the hands of those who couldn't go but who had learned to be good CAP leaders for home-front duties. Meanwhile, urgently needed specialists were invited into the service, located by punch-card records taken from CAP application forms.

The danger of being grounded had not yet passed. In the hysteria of the early days of the war, it was feared that some incident might lead to hasty and damaging regulations.

Cleveland "Bombed"

Arguing for greater safeguards, Earle L. Johnson, who soon followed Gill Robb Wilson as CAP Executive Officer, demonstrated how easy it would be for an enemy agent to sabotage a war plant with a private plane. He flew one night over a Cleveland factory, dropped a bag of earth on the roof, and landed at his farm undetected.

Officials saw the point and ruled that a 24-hour guard must be posted at all airfields.

Formal clearance for all flights also was required. At many points, CAP units were able to keep fields operational by helping the operators comply with regulations.

CAP units, meanwhile, were without uniforms except for OCD arm bands. But they were beginning to march in orderly formations, and to learn how military courtesy and discipline help make a working team.

It was not long before members became restless over practicing so much without active warlike missions in sight. But, earlier than they expected, they were faced with a most exacting test of whether they really would or could do the job for which they organized.

Coastal patrol was demanded from the new organization, ready or not. One of the first enemy acts was to start a relentless submarine attack upon our shipping. As our allies then were hard pressed in the battle of Africa, American supplies were crucially important.

The Nazis boldly came within our coastal waters to take daily toll upon our merchantmen and tankers. Civilian travel was soon sharply restricted, by the destruction cutting off gasoline supplies. Ships were torpedoed within sight of watchers upon the shore. Traffic was brought almost to a standstill. A grave crisis had been reached.

CAP GOES TO WAR

Lacking the ships and planes to patrol the thousands of square miles of water that had to be guarded, our armed services could not equip themselves until months afterward. By then, the battle of Africa could have been lost.

From the first ship sinkings, CAP leaders who had foreseen this possible use of civilian planes long before the war, urged that the CAP volunteers be called into service. Objections were many. The civilians weren't disciplined to follow orders and keep secrets. And what could they do with flimsy single-engine landplanes over the winter ocean?

But the continued inroads of the enemy left no choice but to try the experiment. After weeks of delay in orders, three experimental CAP bases were established on the Atlantic Coast, one each in New Jersey, Delaware, and Florida.

Under supervision of the Executive Officer of CAP, oddly assorted planes were flown in, just as on any civilian airport. Shore radios, contributed by the oil companies to help protect their tankers, and a few repair tools hastily assembled were all the equipment the bases had at first.

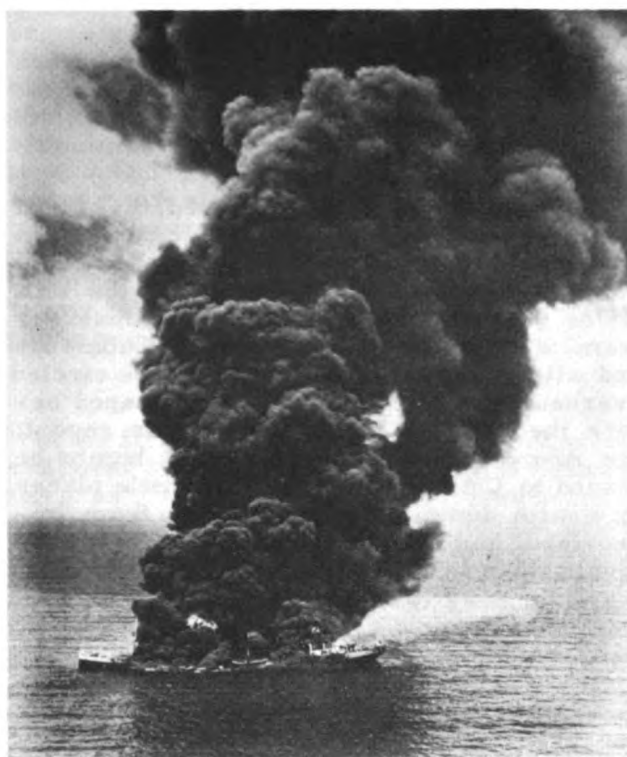


Figure 1-8.--Another victim of Nazi torpedoes.

The volunteers were a cross section of America--young men and grandfathers--millionaire sportsmen, farm lads and garage mechanics. They came with hastily packed suitcases and the sort of flying togs they might wear on a Sunday flight at home. The only protection they had against crashes into the sea were kapok life vests such as duck hunters wear.



Figure 1-9.--Fangs for the dogs of war.

U-Boats Spotted

From almost the first flight, the flyers spotted U-boats. Lifeboats, floating bodies, and wreckage were logged by CAP pilot-observer teams, in constant radio communication with shore bases.

Though the planes were unarmed, the secret was kept so well that submarines crash-dived on their approach. But the CAP planes could summon bombers and vessels to the kill.

One day, however, a CAP pilot-observer team off Florida saw a pig-boat submerge and stick in the mud. As the plane circled overhead, awaiting aid, the sub escaped before the bombers arrived. On this report, the Army Air Force ordered that bombs be issued to CAP. After that, the little planes flew with demolition bombs hung from improvised bomb-racks. Home-made bomb-sights were installed on the left-hand doors.

The success of the initial operations was such that more CAP bases were activated, until CAP daylight patrols were covering the entire Atlantic and Gulf Coasts from Maine to Mexico. The lighter planes could not serve because they could not carry the needed equipment, or return against a strong offshore wind. It took the resources of the 48-state organization to equip the bases, though

the manning was easy. There were always more volunteers than could be assigned.

During its coastal patrol operations, which continued until August 31, 1943, more than 24,000,000 miles were flown over water.

Results included spotting 173 subs and dropping bombs or depth charges against 57. CAP is officially credited with sinking or damaging at least 2, in addition to those destroyed by airplanes or ships summoned by CAP. They found 17 floating mines, some in the path of troop convoys.

Skimming the water in pairs, these single-engine aircraft were on constant daylight watch, often in weather in which no other planes were flying, over the coastal shipping lanes. They went as far as 100 miles to sea in winter, over high waves when engine failure meant almost certain death.

Fatalities were 26, a phenomenal record in view of the mileage flown. Hundreds of victims of ship sinkings, and airmen down at sea, were rescued after CAP reported their position.

Southern Liaison Patrol

Southern liaison patrol was a similar operation. CAP pilots flew 30,000 airplane hours along the Rio Grande to observe illegal crossings in either direction and to report irregularities. They flew so low they could read auto license numbers. Their radio reports resulted in many arrests.

Military courier flights were maintained to carry military mail, repair and replacement parts, and other urgent shipments between Army bases. For the Second Air Force, CAP flew more than 20,000 miles per day throughout the west on regular schedule with a high percentage of completion, often when other planes were grounded. At many Army fields in other areas, CAP airplanes were assigned to carry rush shipments on call.

Tow target and tracking, for anti-aircraft gunnery and searchlight practice, were performed by civilian planes for the first time after CAP volunteers had developed the methods. CAP performed more than 20,000 missions for such training in the Eastern and Western Defense Commands, a total of 46,000 airplane hours. To fly over guns shooting live ammunition, or into the blinding glare of searchlights, is not the easiest assignment.

In missing aircraft search, CAP officially flew more than 24,000 airplane hours during the war, and much more on their own. Flying low and slowly, CAP pilots and observers found that for which they were looking. They were especially valuable in mountainous,

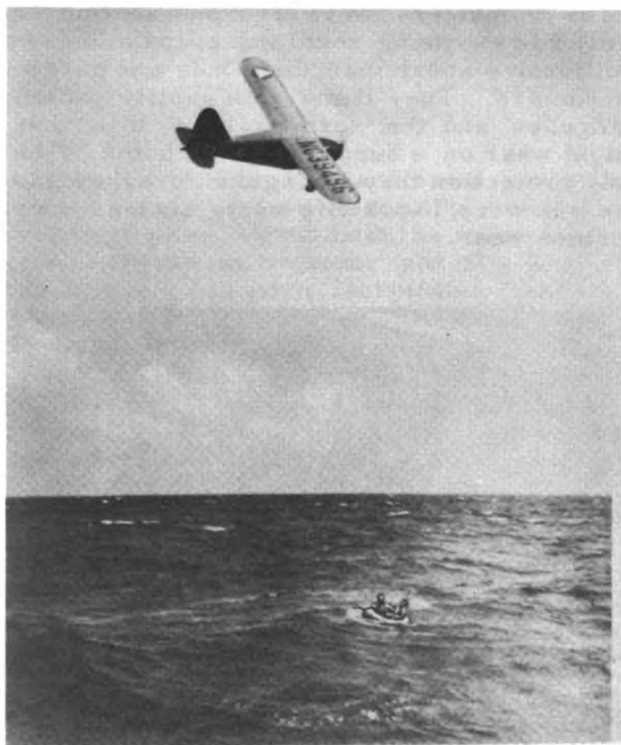


Figure 1-10.--Many a seaman owes his life to CAP.



Figure 1-11.--Searching for downed aircraft.

wooded, or desert terrain where the local CAP flyers knew the area. Many wrecks were found, ground crews sent to stand guard, bodies removed, and aid given to survivors.

Other military missions, for the Army Air Forces, included inspection of camouflage and smoke screens, exercise of the Aircraft Warning System in the Southeast, radar training flights, and other special missions to relieve Army planes and personnel for combat duty.

Defenses Tested

To test ground preparations and remind all citizens of their duties, CAP conducted many mock raids, often dropping leaflets which proclaimed, "This could have been a bomb."

Many night flights were made to observe the effectiveness of blackouts. When air markers were obliterated early in the war, lest they guide an enemy, CAP flew observation missions to see that the job had been done. To aid the salvage drives, aerial searchers were flown and large tonnages of scrap metal, such as old bridges and abandoned mining machinery, were found.

CAP backed the War Bond drives by giving aerial exhibits, dropping pamphlets, and giving free airplane rides. Many units helped blood bank drives. Some flew plasma to central banks.

Had there been need to defend against enemy action, other than on coastal patrol, CAP was ready for inland missions too. All units were instructed to have their local plans to block airport runways and post guards if enemy aircraft were reported.

In the production effort, there was work to do. When transportation was often a bottle-

neck, CAP industrial courier service brought urgently needed repair parts, materials, and blueprints to war plants. Stoppage of assembly lines was thus prevented. Aircraft production was aided by formation of CAP squadrons in the plants to increase aviation interest and knowledge among the workers.

Women, from the beginning, were admitted into Civil Air Patrol on an equal status with men. The ladybirds at airports were on hand to do the big clerical job of setting up unit records, and helping applicants get their paper work done right.

Ladybirds Grounded

In the first coastal flights, women observers went aloft. But the danger was deemed too great. It was decided to bar women from coastal patrol and from most of the later military missions.

But they continued on coastal patrol ground duties such as plotting board operation, and in the many types of volunteer flying of CAP. Many were on missing aircraft search, for example, where the hazards of the mountains were as great as those the coastal patrol men faced over water.

As the armed services formed their women's units...the WACs, WAVES, Women Marines, Spars, and the flying WASPs...CAP-trained women joined by the hundreds. Many became officers and some were in the highest posts.

Many who remained in their home-town squadrons became CAP officers. The unit adjutant often was a woman. Thus CAP, in the war years, made the most of all willing talent.

The command of CAP, after General Curry went to other duties, devolved in the spring of 1942 on Earle L. Johnson, who was commissioned as an Air Force Captain, and later promoted grade-by-grade through the years to Brigadier General in 1947.

To Johnson went the difficult task of holding the organization, after its initial burst of enthusiasm, to continued local activity which could mean active duty to a small minority. For a time, the coastal patrol was threatened with discontinuance. Funds to pay for airplane operation and per diem for personnel were so slow in coming that there were some very narrow escapes.

Program Continued

Had the coastal patrol gone before the nation-wide system was well established, there could have been no future for the program. But it held. The prospect of active

duty, though few could share in it, was a great incentive for volunteer work.

Uniforms also were made possible by the prestige of the coastal patrol. After CAP members had worn Army-type garments without insignia other than the CAP shoulder patch, permission was granted to add special CAP silver buttons and insignia, including a silver version of the Air Force wing and propeller emblem.

CAP officer appointments also were authorized, with insignia of grade the same as the Army's. A minimum number of hours of CAP training in prescribed courses was required for issuance of commissions, another incentive for work.

The catch in it was that CAP's distinguished insignia included bright red shoulder loops which most members bitterly resented. These loops were a very sore point during

most of the war. But in its first 10 months, CAP began to look more and more like a military outfit.

The CAP Cadet Program was added on October 1, 1942. Until then, 18 years had been the minimum age for enlistment. But the younger members, qualified for duty with the armed forces, were soon drafted, before they could benefit much from CAP training.

Now that the senior training program was operating, it seemed that without much extra effort it could be made to yield a valuable by-product by teaching young people of pre-draft age before they entered the service. Other youth programs had been discussed but failed to develop.

Cadets Enrolled

CAP, therefore, went forward on its own. Lacking authority to form a cadet corps,



Figure 1-12.--Thousands of boys and girls received wartime training.

CAP headquarters managed to get OCD approval, on a redefinition of its membership requirement, to create a cadet grade of membership from ages 15 to 17 inclusive. Slightly different insignia were prescribed for the cadets and the movement was launched by a one-page directive.

By this one page of paper and the printing of a simple membership card, some 15,000 young people were given military and aviation training within the next several months at a cost to the Federal Government of only about \$300. At first, the cadet membership was limited. Each senior squadron was authorized to form a cadet unit no larger than its own membership. Each man in CAP could sponsor a boy cadet and each woman could sponsor a girl.

The CAP Cadet Program was founded by Kendall K. Hoyt, then a Captain on the National Headquarters staff, and directed by him for its first two years.

Total losses in all military flying were approximately 50 men and 150 airplanes. It was a substantial sacrifice. But, in terms of relative safety, CAP discipline paid off. All other records of light-plane flying show a fatality rate many times higher.

AAF AFFILIATION

Air Force auxiliary status was won by CAP because of its military flying. During the winter of 1942, though casualties were mercifully few, lack of safety equipment was a constant worry. Though CAP flyers were performing actual combat missions, in danger of enemy gunfire or capture as well as from crashes, this unprecedented service was on a vague legal status.

Officials in charge of priorities found it difficult to grant CAP the life boats and other equipment needed, as long as the organization was under civilian auspices. Though its National Commander and his staff were Air Force officers in uniform, they were on a sort of detached duty almost as if they were civilians. Civil Air Patrol still was a division of the Office of Civilian Defense.

Although CAP owed to OCD its chance to make a start, it was plain that the growing unlikelihood of civil emergency would cause the parent organization to dwindle and die. The loyalty of airmen, moreover, was given to the Air Force.

The supply problem set negotiations in motion for transfer of CAP to the War Department. Though the supplies actually were found that winter National Commander Johnson was able to effect the change the airmen wanted.

On April 29, 1943, the transfer was made by Executive Order of the President. All authority held by OCD over CAP was given to the War Department and control was placed in the Army Air Forces. Though most of the active flying missions did not outlast the year, there was a big new job for the entire inland organization.

Men Wanted

Recruiting of Air Force trainees was urgently needed. As airplanes rolled off the assembly line, great numbers of intelligent and physically fit young men were required to man them. Though the Air Forces long had a priority on draftees, and reduced the physical and educational standards considerably, the need was not yet filled.

By the spring of 1943, several methods of recruiting had been used to their limit. The school term was about to end. Through the summer the students would be scattered.

CAP units in all areas, most of them without prior opportunity to be of direct service, were eager to make a showing in their first assignment under Air Force command. CAP used almost every known method of publicity and salesmanship. Its unit staffs included public relations officers, many of them top men in civilian news writing, publicity, and advertising.

Impromptu air shows were staged. Boys were brought into Army airfields by the thousands for a look at what an airman's career could mean. Many were given free airplane rides by CAP members, to land thrilled and ready to sign on the dotted line.

Later, CAP was authorized to administer the mental screening tests, so that applicants could be delivered to the Air Forces ready to be given the oath on satisfactory completion of physical examination. The Air Force enlisted reserve was open to 17-year-olds, for call to duty at 18. Meanwhile, CAP hometown training, through the cadet program, prepared many in the rudiments of meteorology and navigation, while time-consuming courses such as the Morse code and first aid were well learned.

Cadet Program Grows

This helped ease the transition into Army life and enabled many, after training at high cost, to win their wings where failure may have resulted without the running start they achieved in CAP. The cadet program grew rapidly under the impetus of this successful work.

In fact, the Air Force recruiting effort went so well that an oversupply of aviation cadets was developed and many had to be returned to the Ground and Service Forces in 1944. After that, CAP aided WAC recruiting with high success for a time through the same methods of free airplane rides.

CAP Headquarters was moved from Washington to New York soon after the organization was transferred to War Department jurisdiction. The active military missions, which were exacting in terms of formal orders and many administrative details, still occupied most of the staff. Colonel Blee was in charge of military operations. To Captain Hoyt went the recruiting and cadet operation, as well as the public relations, interim training duties, and much other work of the inland organization.

National Commander Johnson toured the State Wings as often as he could, but for long intervals most of the wings had to be handled on a mail-order basis. The recruiting work, however, brought them increasingly in touch with Army installations in their areas so that cooperation was far more extensive than in the OCD period. Resourceful members "scrounged" all sorts of equipment for unit training and operations.

CAP Gets L-4's

Another result of the recruiting was the assignment of scores of Army L-type aircraft among the wings. Though light-plane "puddlejumper" like the civilian craft on the grass airfields, these olive-drab planes carried the Army star instead of the CAP



Figure 1-13.--A ride in the sky for CAP cadets.



Figure 1-14.--Air Force planes assigned.

3-bladed propeller on their wings and fuselage. Thus they were a tangible symbol of the Air Force relationship, hitherto remote from the local units.

Young recruits flocked to ride in the L-ships just as eagerly as if bombers had been provided. The drawback was that Army regulations called for intricate paper work for each airplane.

Volunteer flying missions, as the active military work tapered, were developing in many areas as CAP members met local emergencies. While much of this work was not directly connected with the war, all civilian resources count during a total military effort. To conserve civilian materials, as in forest fire prevention or rescue of livestock in floods, was all part of the nation's strength.

Other activities included disaster relief, mercy missions, forest, lake, and river patrol; search and rescue, predator control, and communications services made possible by the 2,000 emergency radio stations set up by CAP during the war under special FCC license.

In the spring of 1945, CAP National Headquarters became a staff section in Training Command headquarters at Fort Worth, Texas. Under a project officer in each of the 5 regional training commands, an Air Force officer, usually a former combat pilot, was placed as a liaison officer with each CAP State Wing. A supply sergeant was furnished. Before that, the only paid personnel in the wings was one civilian secretary for each state.

The first job of the liaison officers was to make an inventory of all Air Force property

held in CAP. It began to look as if the property then would be recaptured.

Early in 1945 it appeared that CAP's appropriation might be discontinued by Congress. An Air Force order was ready to issue, discontinuing the organization, but the money was reinstated at the last moment.

The orderly process of readjustment to postwar service, in which many of the uses of CAP had been foreseen by the planners, meanwhile had been disrupted. When the war ended first in Europe and then in Japan, the initial purposes of CAP had been concluded. National Commander Johnson was sent on an overseas assignment, and Colonel Blee was acting in his place.

POSTWAR CONTINUANCE OF CAP

Postwar continuance was left for the CAP members to decide. As they considered the proud traditions of the war-born organization and its many fields for continuing service on the one hand, and the difficulties of holding volunteers in peacetime on the other, there were strong opinions on both sides.

Efforts were made to work closely with civilian groups which the Air Force was encouraging to build public support for air power. But most of CAP's leaders in the states wanted to keep independent.

Early in 1946, a committee of Wing commanders met to make plans. Then all Wings Commanders were called into conference. The continued good in CAP far outweighed the difficulties of continuance.

National Headquarters was reestablished at Bolling Field, Washington, D.C. Colonel Johnson returned to take charge again. The cadet program continued as the principal mission. The summer encampment program was continued.

Air Force help through the liaison officers, planes, and training aids was continued on an expanding scale. The CAP radio network was expanded. Search and rescue authority was formalized.

Air medals, awarded during the war to two CAP flyers for a daring rescue at sea, were approved for all coastal patrol men who had flown the required number of hours.

The program was made permanent by Act of Congress, chartering Civil Air Patrol under the direction of the Wing Commanders or their successors.

When Col. Johnson held the first CAP dinner for Congress, for the modest purpose of rendering thanks for the opportunity to serve in the war, a quorum of both Houses attended. The Speaker of the House of Representatives



Figure 1-15.--From bases like these, CAP airmen flew 24,000,000 overwater miles in wartime service.

was the master of ceremonies, and the President came to speak.

Thus ended the war story of Civil Air Patrol. In it, the names of dozens or hundreds of loyal members were deserving of mention for great merit and for work far beyond the call of duty.

Earle L. Johnson continued beyond call and crashed to his death early in 1947. Next year, his close friend George A. Stone, who had become head of the CAP Board, likewise crashed when flying home from a meeting in Washington.

CAP's National Commander after Johnson was Brigadier General Frederick H. Smith, Jr., who was succeeded by Major General Lucas V. Beau. The CAP Board is now (March, 1950) headed by General Carl A. Spaatz, retired Chief of the Air Force.

FUTURE PROGRAM

For the future, the course of CAP has been marked by what has gone before. The cadet program will continue to be its mass activity, as detailed in the next unit of this manual. An officers' candidate grade of membership has been added to encourage cadets to continue

training between the time they pass cadet age at 18 and before they are 21.

Success of the program continues to center around the airports, for the active flying in CAP is what makes it more than a training corps. The airfield and the airplane are the center around which all the many phases are held.

A closer relationship with the Air Force Reserve is indicated year by year. Since the regular air forces are being maintained on a scale far less than recommended by the planners, a strong reserve becomes the more important to keep the necessary numbers in training. The more technical warfare becomes, the more training is necessary.

Should war come, CAP units in each community must be ready to enroll more recruits and train them immediately for whatever form of modern war may be launched against us. It is earnestly requested that each member--and each reader of this manual--read back in the previous section about the civilian defense responsibilities of Civil Air Patrol.

Upon its record of service in past emergencies and its unique capacities for what our nation may have to face, CAP can properly

win whole-hearted support wherever it is organized, if it tells the full story.

An Officer Training Corps is established within the general framework of CAP to provide a means for preparing former cadets and new members for the responsibilities of administration and leadership. This phase of training embraces all persons between the ages of 18 and 21, during which time they wear OTC metal cut-outs and OTC shoulder patch as distinguishing features on the regu-

lar CAP uniform. A commanding officer and staff are selected from members of the corps to carry out routine administrative duties. During OTC training, permanent non-commissioned grades may be earned in addition to credits toward commission rank. The cadet administration, understudy, and special training sections organized within the OTC afford an opportunity to rotate trainees without affecting the manning table of either the OTC or the CAP unit.

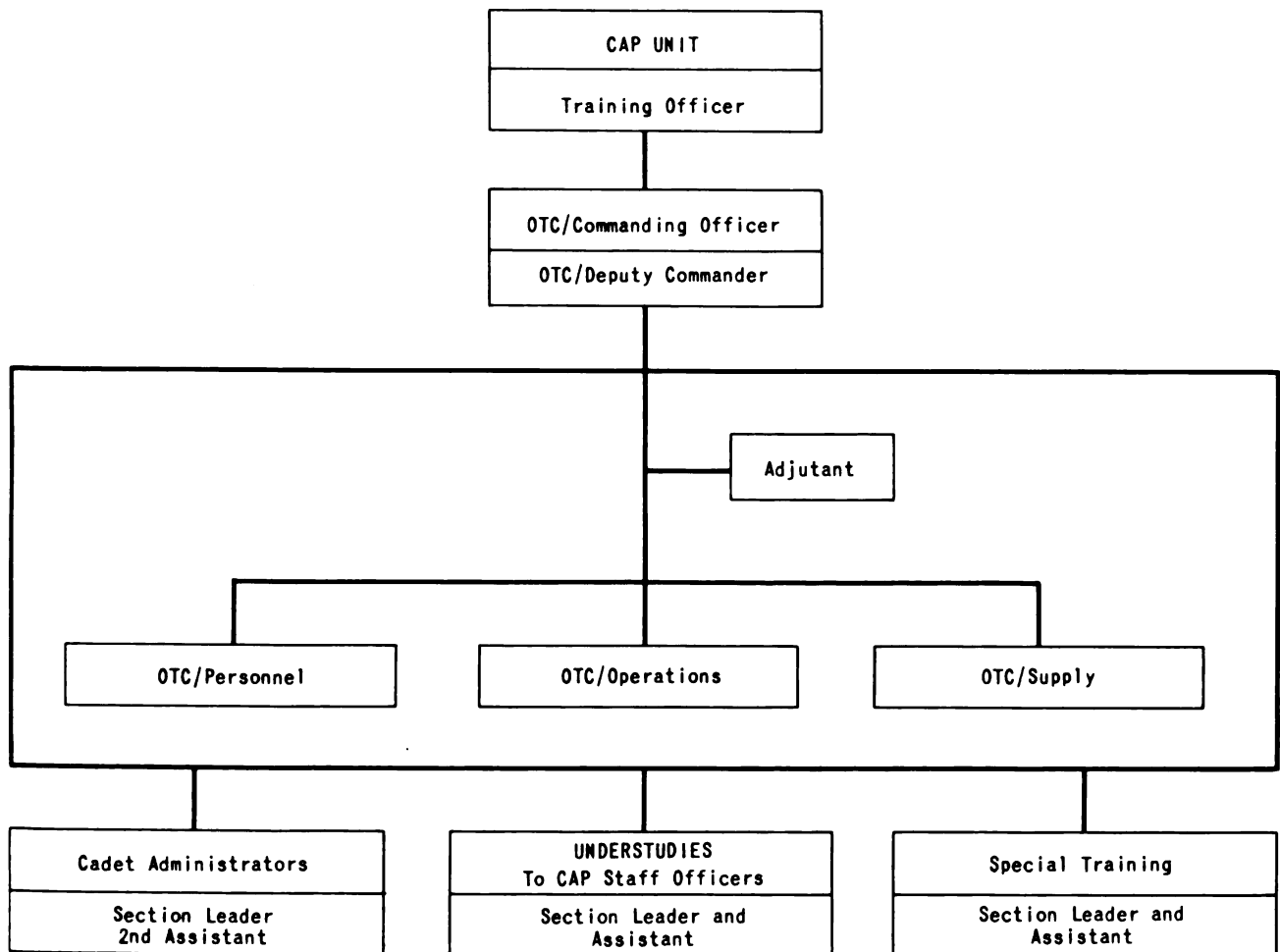


Figure 1-16.--Organization chart.

REFERENCE

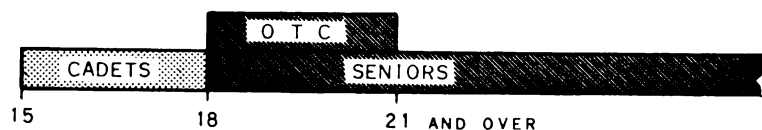
CAP REG-50-3 Officer Training Corps.

WING SERIAL NUMBERS

Alabama	4-6	New Hampshire	1-2
Alaska	9-8	New Jersey	2-2
Arizona	8-5	New Mexico	8-4
Arkansas	7-4	New York	2-1
California	9-1	North Carolina	4-4
Colorado	8-3	North Dakota	7-8
Connecticut	1-5	Ohio	5-1
Delaware	2-3	Oklahoma	8-2
Florida	4-1	Oregon	9-2
Georgia	4-2	Pennsylvania	3-1
Hawaii	49-1	Puerto Rico	3-5
Idaho	9-4	Rhode Island	1-6
Illinois	6-1	South Carolina	4-3
Indiana	5-2	South Dakota	7-7
Iowa	7-2	Tennessee	4-5
Kansas	7-5	Texas	8-1
Kentucky	5-3	Utah	9-7
Louisiana	4-8	Vermont	1-3
Maine	1-1	Virginia	3-2
Maryland	3-3	Washington	9-3
Massachusetts	1-4	West Virginia	5-4
Michigan	6-3	Wisconsin	6-2
Minnesota	7-1	Wyoming	7-9
Mississippi	4-7		
Missouri	7-3		
Montana	9-5		
National Capital	3-4		
Nebraska	7-6		
Nevada	9-6		

Cadet serial numbers are obtained in each case by removing the dash except in the case of Hawaii, where the cadet number is 86.

AGE GROUPS



Unit II

CIVIL AIR PATROL CADETS

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UNIT II

CAP CADETS

The Civil Air Patrol Cadet Program was founded on October 1, 1942, 10 months after the start of the senior CAP organization.

Initially, the stated purpose of CAPC was merely to develop a source of pre-trained young recruits for CAP since the local squadrons in all parts of the country were fast losing their younger members to the Armed Services. From the beginning of CAP, however, a much broader plan was set.

The founders of Civil Air Patrol were impressed with the youth movements in Germany, Canada, and other countries to prepare for air war. They believed that the United States should launch an American-style program for the security both of the nation and of the young people themselves. Recruits with prior training have a better chance to advance and survive in the service than those without it.

Before the war, home-town training in aviation and military subjects was not widely available, either in public schools or in youth organizations. While the youth of other nations marched and saluted, every American effort to counter-organize was likely to be met with charges of "regimentation", often from groups later revealed as secretly backed by Fascists or Communists.

Airplane model building had attracted hundreds of thousands of young enthusiasts, but such activities had little guidance from adult airmen so there was no bridge between the flying of models and going aloft in the real thing.

The problem of Civil Air Patrol, therefore, was a delicate one. Between the possible attacks from outside and the danger that many airmen in CAP would not care for anything but an adult flying corps, the Cadet Program

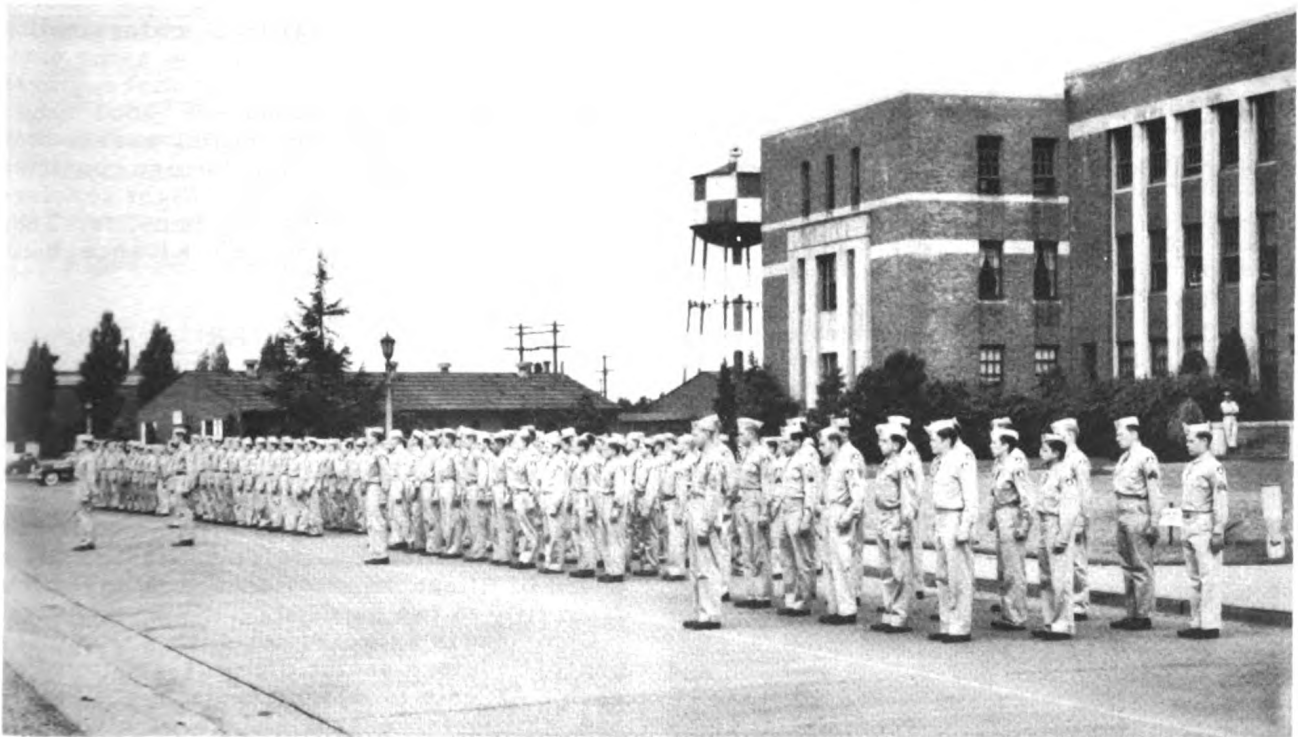


Figure 2-1.--The goal: 100,000 cadets.

was started on the legal premise that it was merely a junior grade of membership and not a cadet movement at all.

By limiting the initial cadet organization to one squadron per senior CAP squadron, one boy cadet to each male senior member, and one girl cadet to each woman member, CAP National Commander Earle L. Johnson was able to test the program under careful controls. The prompt success of CAP cadet units in many parts of the country, however, soon added valuable field experience. The CAP wings themselves asked for authority to expand beyond the one-for-one ratio.

When CAP was transferred to the War Department in 1943, all members and activities went with it. So the gearing of the cadet program into the big new job of Aviation Cadet recruiting was a natural transition. The foresight of CAP's founders paid big dividends for military aviation. How the cadets became CAP's main peacetime mission has been told in the previous historical outline.

Purpose of the CAP Cadet Program is to maintain a corps of 100,000 cadets--young men and women of 15 through 17, for aviation and military instruction on the highest standards that local resources and talent can provide. Benefits to public interests and to the cadets themselves include:

1. Civil Air Patrol, as originally intended, draws pre-trained recruits from the cadets who reach the age of 18 and can qualify for senior membership, or for further study as officer candidates between the ages of 18 and 21. In emergency, cadets can function much as senior members can. Drawn to CAP also is the help and interest of many adults who would not respond to an air power or civil aviation movement, but are willing to work for the welfare of young people.

2. U. S. Air Force gains many potential recruits. In emergency, as during the past war, CAP cadets may join the Air Force enlisted reserve while still in CAP training. In peacetime, most cadets will proceed with their education, but many will turn to the goal of military or civilian air service, or to a Reserve affiliation.

3. Civil aviation is helped by the spread of aviation interest, not only among CAP cadets and their parents and relatives, but into the school systems and among civil groups. People who understand aviation and feel themselves close to it are likely to be more frequent patrons of commercial aviation than others. For the local airfields and air service operations, CAP leaves the job of flight training to private enterprise.

4. Civil defense requires discipline and training of the sort given to CAP cadets. Peacetime services, such as working as guards and guides during open house days at airports, and emergency duty such as guarding plane wrecks, are practical training for the exacting jobs that enemy planes or saboteurs might cause in any area in war. The presence of boys and girls so trained in the student bodies of high schools will help to prevent panic and to save lives in any disaster.

5. Local communities gain from the support to civil aviation and to civilian defense. Furthermore, the character building nature of the program is a strong influence against juvenile delinquency. CAPC is open only to young people of good character. Those who do not prove reliable cannot be kept since it is not safe to allow irresponsible youngsters to have anything to do with airplanes. But the attitude and habits gained in CAPC spread among many young people and are an influence toward good.

6. The CAP cadets themselves gain the most. Military training in courtesy and discipline teaches not regimentation, but teamwork. How to be good followers who can grow to be good leaders. Those who go into the service are likely to have a better chance of advancement from the head start achieved in CAP. The aviation training may point to an aviation career or at least understanding and use of air services. At the same time, the teamwork, self-control, and thoroughness which safe flying demands are good habits for any occupation. Outstanding cadets may qualify for selection to visit foreign countries in the annual exchanges; for flight scholarships; and for other trips and benefits. They may make friends who can advance their careers.

ORGANIZATION

CAPC units are organized as cadet squadrons and flights, and attached to senior CAP units for administration and training. Command and staff appointments are similar to those in senior squadrons and flights, but of more of a practice nature, as the senior unit in each case must control. A flight is composed of fifteen to sixty cadets; a squadron, from fifty to two hundred.

Command is exercised through a Commandant of Cadets, a senior member appointed by each CAP unit to which cadets are attached and who is in general charge of all cadets under his unit.

Because the commandant of cadets is concerned solely with the cadet organization, an

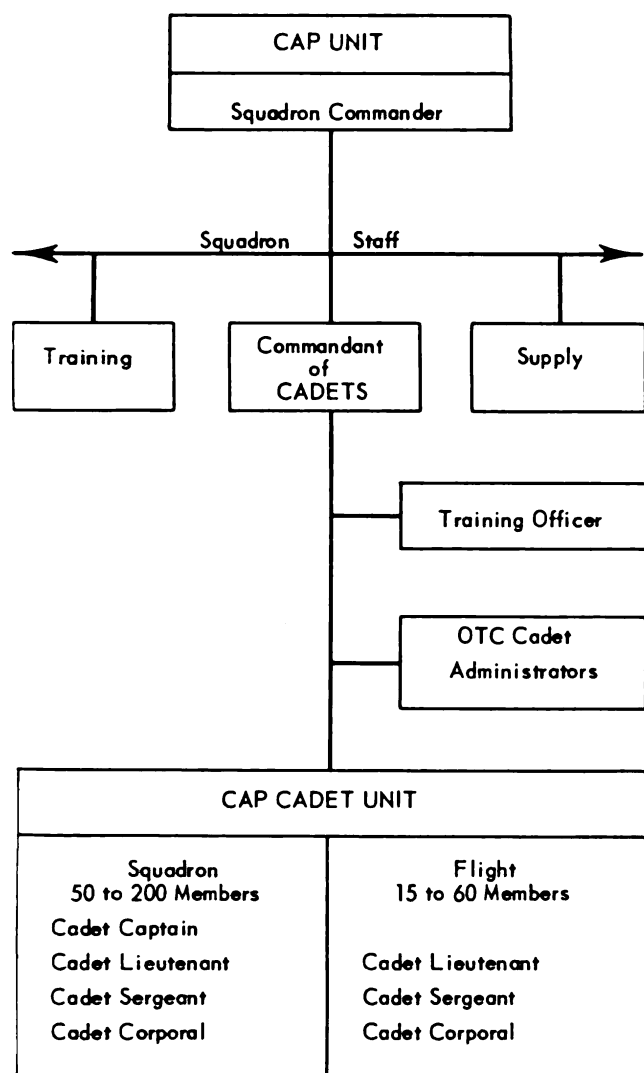


Figure 2-2.--Organization of a cadet unit.

individual wellqualified through previous experience to deal with young people--possibly an educator, a former YMCA or Boy Scout official, or a leader in some similar youth movement--usually is selected for the post. He must be competent to direct the cadet program as an activity completely separate from the senior organization, although in many cases cadets will be utilized in the activities of the senior groups.

At the lower levels, the commandant of cadets is responsible directly to the commanding officer of his unit. His duties include correspondence, preparation of records and reports, supply, training, discipline, and general direction of the cadet unit business. In other words, he operates a unit which in most respects is self-sufficient.

Each cadet unit in addition has its own cadet officers. A cadet flight is commanded by a cadet lieutenant; a squadron by a captain or major, depending on size. Manning tables show how many officers a unit of a given size may have.

Every cadet should know the chain of command under which he serves, through his cadet officers and the Commandant of Cadets, through the senior unit command, and the state CAP Wing to the National Commander.

Uniforms and insignia are similar to those of the senior organization with differences for readily distinguishing between senior and cadet members. The CAP emblem on the shoulder patch is worn with the word CADET added underneath. The cutout letters CAPC are worn instead of CAP. Cadet officers wear silver "pips" to denote their rank. Non-commissioned cadet officers wear small chevrons of special design.

Regulations governing cadets are a part of the CAP regulations.

Applications for membership in CAPC are made through the local CAP unit. Consent of parent or guardian is required. This consent includes a statement as to whether or not the cadet may be given airplane rides. No pledge of military service is required.

ACTIVITIES

In training, the week by week routine of the cadets in classes, drill and maneuvers is much the same as that of the senior members. In some units, drill and classes are separate; in some together. Young people have such a natural bent for aviation that they can learn the same sort of things taught to adult beginners.

Training Program

The general program for CAP cadets includes:

1. Academic instruction in aeronautical subjects
2. Self government for the CAPC organization
3. Encampments, reviews, and military specialties
4. Activities involving coordination with senior members.

A typical training schedule provides 80 hours per year based on 40 weeks at the rate of 2 hours per meeting, 1 meeting per week. The 40-week instruction period corresponds closely to that observed in the local public school systems. The remaining 12 weeks is utilized in scheduling summer encampments,

special projects, and to allow time out for holidays, vacations, and unforeseen program adjustment.

The course of instruction is prepared annually to permit flexibility in programming as cadet ages vary at time of enrollment, and training must also be provided for those who participate in the program for less than the regular three-year periods (15 to 18). Each year's course of instruction is divided into three phases:

Phase one (academic) constitutes the minimum requirements of the CAP cadet program, and is based upon CAP Book II, Aviation Study Manual. Material in phase one is divided into three series:

1. Basic--Red
2. Secondary--White
3. Advanced--Blue

Phase two (activities) embraces the functions, missions and the many related activities of CAP in which cadets may participate. In addition to periodic drills, which are required, cadets are encouraged to take part in all senior activities except those which involve flying under hazardous conditions.

The cadets have participated actively in all phases of communications work, an invaluable experience for boys interested in radio or electronics; they have played an important part in the many CAP activities in connection with disaster relief, operating message centers, manning water level observation stations during flood, and other emergency duties; and have helped, as members of ground parties, to locate and rescue lost airmen.

Cadets also have the opportunity to supplement their theoretical instruction in aviation with practical experience, working side by side with the ground crews and with members of the unit's administrative staff.



Figure 2-3.--Practical experience.

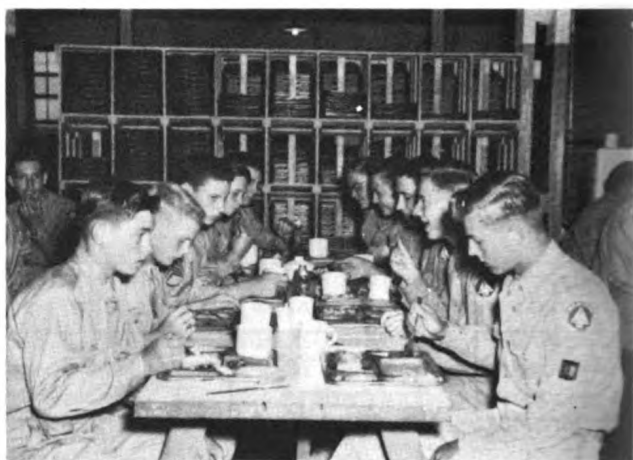


Figure 2-4.--Life in an Air Force Dining Hall.

Phase three (encampments) is one of the most important phases of the program. The annual summer encampment is an event which all cadets are encouraged to attend. Attendance at one encampment is mandatory for cadets in the advanced course, and candidates for certificates of proficiency must attend two.

ENCAMPMENTS

Encampments, each of two weeks duration, at present are held during June, July and August at 21 Air Force bases throughout the United States. There the boys are put through a rigorous 80-hour course of instruction in such subjects as jet propulsion, radar, meteorology, airplane engine mechanics, marksmanship, flying safety and crash procedures, and aircraft familiarization (during the course of which they may be given orientation flights).

During their two weeks at camp, cadets are provided with an opportunity to gain an intimate knowledge of all the operations of an Air Force Base, and are given a taste of actual military life, living in the same sort of quarters, eating at the same sort of dining halls and using the same facilities normally provided for Air Force personnel. Throughout the encampment, they are under the constant supervision of senior CAP and Air Force personnel.

The only expense to the cadet during the encampments is a nominal charge for meals, and in a number of cases, even that expense is defrayed from squadron funds.

A program of instruction is issued by National Headquarters outlining in detail the hours, subjects, and other specific requirements of CAP training. Some subjects are brief and may be completed within a few weeks. Others will contain sufficient material for use during the normal 3-year train-



Figure 2-5.--In lighter vein.

ing period, and still others will be used intermittently.

USAF Recognition of CAP Training. Several priority ratings have been established for CAP cadets who satisfactorily complete the three phases of the cadet program. These priorities are helpful to those desiring to qualify as an AF Aviation Cadet or to enter a college Air ROTC Unit. Pay and rating allowances are made for CAP training for those enlisting in the regular air force or any of the civilian components.



Figure 2-6.--Orientation flight.

Social events, as in any young people's organization, relieve the serious work.

Orientation flights are given by senior members so the classroom theories are demonstrated in the air. Although CAP does not give flight training, cadets are encouraged to learn from local operators. Some CAP units raise flight scholarship funds for this purpose.

Ground work is taught in detail. This may be the route to a career since those on ground duties, either in military or civil aviation are several times more numerous than those who fly. Training aids, furnished from military surplus or other sources, include aircraft engines and parts for disassembly and study. Radio instruction also is thorough. Cadets may participate in the CAP radio network. In all CAP activities, opportunity is granted within the ability of the individual.



Figure 2-7.--Theoretical training.

In emergencies, cadets may volunteer with the adults for non-flying roles in search and rescue, guard duty, communications, first aid, and other services. The history of CAP includes many cases where cadets have played an important part in the success of missions such as finding survivors of plane crashes; operating message centers for the prompt delivery and pick up of messages, and manning water level observation stations and patrols in flood areas. Individual cadets on their own have signaled lost planes to safe landings by flashing directions to them.

High School Program

In addition to its training program within CAP units in the field, the Civil Air Patrol has inaugurated an extensive pre-flight training program in conjunction with public and private educational agencies, in many instances coordinating the theoretical work with practical application in regular CAPC groups.

CAP National Headquarters, with the aid of an educational advisory committee composed of qualified professional personnel, developed a formal course in Fundamentals of Aviation which many schools are using as an elective, one-year science course with credit in the 10th, 11th or 12th grades of high school.

Operated as a one-period, five-day-per-week classroom course, it utilizes as a supplementary textbook the CAP Aviation Study Manual, in which all military subjects were omitted so as not to conflict with regulations in some schools governing such teaching.

In schools where the course is taught as a co-ordinated program, with the students enrolled in a CAP cadet unit, an effort is made to provide sufficient copies of the study manual without charge. The manuals are available to other schools, however, at a nominal charge, and many institutions which are unable to co-operate in quasi-military projects such as the cadet program thus are enabled to obtain the benefit of an up-to-date and comprehensive aeronautical textbook.

In either case, however, the classes are under the absolute control of the school principal for class work. An instructor's manual (Book III of the CAP series) also is available to aid the teacher in organizing his course and to show him how to use the study manual within the framework of his formal classroom course.

To stimulate interest in all of its training programs, a number of special cadet activities are conducted by the Civil Air Patrol. Among them are the International Exchange of Cadets and the International Drill Competition.

INTERNATIONAL CADET EXCHANGE

Conflicts between nations, like quarrels among individuals, usually arise over lack of understanding: the failure of groups of people to comprehend the special problems and viewpoints of other groups, which may differ because of geographical, racial, economic or other considerations. It is only human nature to distrust and resent the things which we do not understand, and when the distrusts and resentments of the peoples of

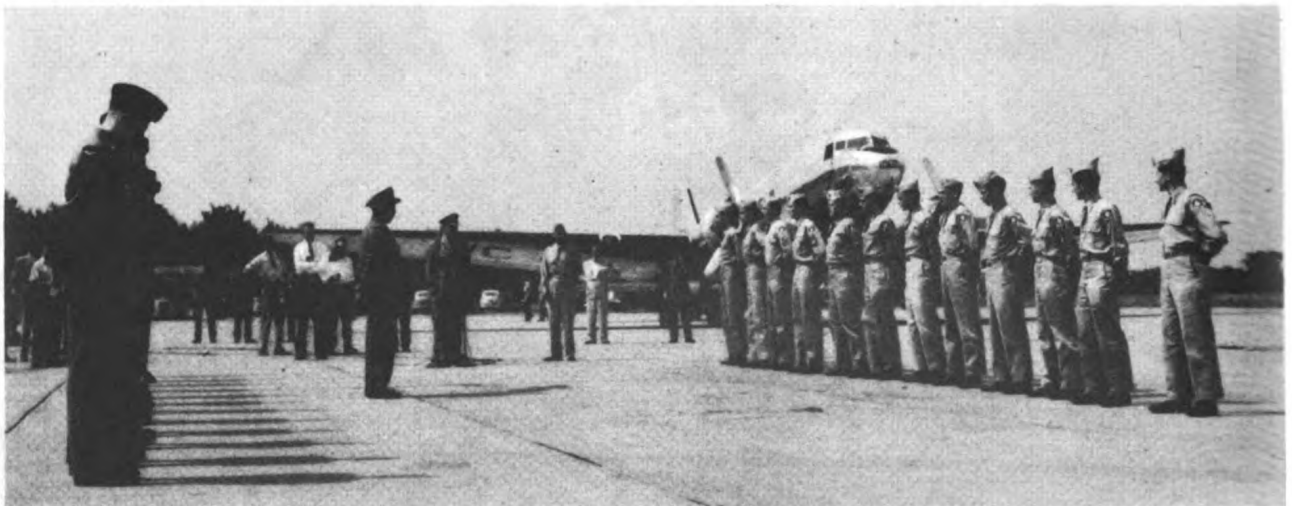


Figure 2-8.--Cadets of two nations meet.

the world are lumped together, war not infrequently results.

To promote international understanding, and thus serve the cause of peace, the Civil Air Patrol has included among its cadet activities an ambitious exchange program to give outstanding air-minded youth of each participating country an opportunity to observe the life and institutions of other nations at first hand; a chance for each to see for himself what sort of people his neighbors are and, equally important, to show them what sort of people we are.

Each year, fifty or more CAP Cadets are sent abroad for two weeks, with all but minor personal expenses paid, to see the historic spots about which they have read in their schoolbooks and newspapers, to live with and get to know the youth of another country, and to hear what those others have to say about us. A like number of air cadets from the exchange countries, meanwhile, simultaneously are given similar tours in the United States by the CAP.

The program, in addition to the promotion of international good will, should have the further effect of stimulating recruitment, since every male CAP cadet is eligible to represent his wing on one of the tours; of furnishing an incentive to all cadets to excel at their assigned tasks, and in those soldierly qualities which the successful candidate for selection must have, and of awakening the interest of parents and the communities at large in the CAP program.

The International Exchange of Cadets was established by the CAP, under the guidance of the United States Air Force, in 1948, when a group of fifty cadets, one from each CAP wing, was sent on a tour of Canada where, for two weeks, they live and exchange views with their cousins north of the border; visit factories, mines, and military installations; toured the Yukon Territory, and participated in a round of social functions intended to cement hemispheric amity.

At the same time, a comparable group of Royal Canadian Air Cadets, flown here in USAF planes, was taken on an aerial tour of air bases, factories, and points of tourist interest (including the Hollywood movie studios), and given an opportunity to fraternize with their counterparts, the cadets of the CAP, at every stop-over point.

The program was expanded in 1949 to include England, France, and Switzerland, and it is expected it will be further extended as other countries become interested in the project.

Typical Tour

While the program may be changed in any or all of its details from year to year, the 1949 tour is a typical sample of the international exchange of cadets.

In that year, the first contingent of American cadets, fourteen of them from wings in the eastern part of the United States, assembled on July 29 at Selfridge Air Force Base, Michigan, where they were flown in CAP planes by CAP liaison officers of the Air Force. At Selfridge, they boarded a C-47 and were flown to Ottawa, Canada, while a second C-47 picked up a similar group of twelve cadets from the western wings at Lowry AFB, Denver, Colorado, and flew them to Calgary.

For the ensuing fortnight the Americans were given a whirlwind tour of the provinces, as well as an opportunity to spend some time in Canadian air cadet camps. One group was flown into the Canadian northwest, stopping over at Vancouver and Prince George, British Columbia, and in the storied Yukon Territory, with entertainments at points visited. The other group flew east to Newfoundland and Nova Scotia, where they went deep sea fishing, and were given a round of entertainments by community groups and units of the Air Cadet League.

Simultaneously, twenty-six Royal Canadian Air Cadets were being flown, in USAF planes, to Dallas, Texas, where they were given a barbeque by Colonel D. Harold Byrd, vice-chairman of the National Executive Board, CAP, and each acquired a 10-gallon hat.

After two days at Dallas, where they saw many phases of Air Force training, the Canadians were flown to Fort Tuthill, Arizona, which they made their base for side trips to the Grand Canyon and similar tourist attractions, and for fishing, swimming and horse-back riding expeditions.

A high spot of the trip was a two-day visit to Hollywood, where the visitors toured the movie studios, watched several motion pictures being made, and met some of the film



Figure 2-9.--Canadians in Texas.

stars they had seen on the screens. Then back to Lowry, when they took off on August 13 for the finale at Edmonton--a joint dinner with the American cadets who had been touring Canada. The following day, the twenty-six Americans were flown back to Selfridge and Lowry, whence they returned to their home units.

Meanwhile, on August 4, another thirty-five CAP cadets were picked up at Washington, D. C., and flown in a USAF Constellation to London, where the group split up, twenty-five of them remaining in England, five going to France and the remainder to Switzerland. The same plane carried thirty-five European cadets, from England, France, and Switzerland, back to the United States for a crowded fortnight of visits to Tinker and Randolph air bases, the University of Illinois, Fort Tuthill, Los Angeles, and Washington, D. C.

While the Americans in England were learning that English mayors are addressed as "Your Worship," and were seeing Buckingham Palace and Windsor Castle, those who went to France and Switzerland, all licensed power-pilots, were taking intensive courses at Challes Les Eaux Glider School, in southeastern France, and at Agno and Berne, Switzerland. All received honorary glider-pilot certificates.



Figure 2-10.--CAP cadets in London.

All American groups reassembled in London for the trip home on August 24. They, and the foreign cadets who had been guests of the CAP, and the USAF, all returned to their homes with new conceptions of the world we live in; with a new understanding of the citizens of the countries visited, and with new friendships, many of which may endure for a lifetime.

Who Is Eligible?

Every CAP Cadet has a chance to be chosen as one of the fortunate group sent abroad in the International Exchange. Every year, the cadets of each unit of each CAP wing nominate one candidate by popular vote. His name, accompanied by a complete personal history of his character, qualities of leadership, academic standing, and his contribution to the CAP program, is forwarded to the wing commander.

All of these nominations are screened carefully, from a merit standpoint, by the wing staff, which recommends from among them one candidate and one alternate to represent the entire wing. Personal interviews and observations of the candidates by the wing commander should form an important part of this screening process.

National Headquarters, CAP, makes the final selection from among the fifty-two candidates and fifty-two alternates whose names are submitted by the wing commanders.

Basis of Selection

Since cadets chosen for international exchanges will be looked upon by their foreign hosts as typical representatives of the youth of this country, only the most outstanding individuals should be nominated. Although personal popularity is indicative that the individual possesses some of the qualities desired, unit officers should brief their cadets before the election on all of the qualifications which will be taken into consideration in the later screening at higher levels, so that the balloting will be more than a mere popularity contest. The "high school hero" type doesn't necessarily make a fit candidate to represent the CAPC abroad.

In general, it is desired that the candidates possess literary and scholastic ability, qualities of manhood, truth, courage, devotion to duty, sympathy, kindness, unselfishness, and fellowship, exhibition of moral force of character and instincts to lead and to take an interest in his fellow cadets, and physical vigor, as shown by an interest in outdoor sports.

More particularly, the following attributes will be required:

Health. The cadet should be in good health, and suffer from no chronic ailments such as sinusitis, asthma, constipation, etc. He should have a physique within Air Force standards--not too fat, too tall or too short--so that exchange group will not resemble an "awkward squad."

Bearing. The cadet should have erect posture and a military bearing. Slouching is a poor advertisement for the CAP, the USAF, and the youth of the United States.

Training. The cadet should have completed courses in military courtesy and discipline, and practice what he has learned to the point where it becomes automatic. He also should have completed training in drill, and be able to hold formation and march properly. He should be alert at all times.

Poise. The cadet should have good poise. He may meet high military and civilian officials while abroad. Many of those whom he will meet will have difficulties with the English tongue. He should be at ease with all of them.

Grooming. Clothes must be clean and well-pressed. Shoes must be shined, and not run down at the heels. Insignia must be proper for the uniform. Personal cleanliness is an absolute must.

Grammar. The cadet's speech may be taken by many as typical of that of all Americans. His grammar should be correct, his voice low and well-modulated. There is no place on the tour for "loud-mouths," and phrases like "I done it" or "we was" make a negative impression.

Manners. Politeness, courtesy, and good manners, especially good table manners, are imperative. Remember, it wasn't so long ago that many Europeans thought of all Americans as being divided into two main categories: rough, uncouth cowboys, and painted Indians. It is up to the cadet to show them that the United States is quite as civilized as their own country.

Social Graces. While it is not imperative that a cadet be a good dancer, occasions may arise where the ability to dance and to mix well with others socially is an asset.

Preparation

When a cadet is selected to participate as one of an exchange group, he should immediately begin to prepare himself so that he can best represent his country abroad and avoid blunders which narrowly missed marring the trip for a few members of earlier tours.

Those preparations should include:

Information (1) He should be well acquainted with the history and organization of the CAP and the USAF, so that he can answer intelligently and completely the questions about them he is asked while abroad. Much of that information can be found elsewhere in this manual.

(2) He should familiarize himself in advance with the history, customs, military ranks, and traditions of the country to be visited. His home town library can supply historical data, consular officers will furnish maps, customs regulations, money exchange data, and protocol information, and the State Department can be contacted for information on military and diplomatic rank.

Clothing. All cadets will be informed by National Headquarters of the proper uniform and permissible insignia. Clothing should consist of not less than two complete uniforms and sufficient underclothing to provide the necessary changes. The 65-pound limit on baggage for overseas aerial tours should be ample if a careful selection of clothing is made.

Miscellaneous Data

Exchange of Information. Cadets are encouraged both to ask and to answer questions of their hosts. Answers should be frank and honest. But don't be a "know-it-all." If the answer is not known, don't guess. Refer the questioner, if possible, to someone who can provide the information.

Customs. Many customs in the countries which you will visit may seem ludicrous to you, but remember that some of ours may seem equally peculiar to your hosts. The Englishman who forks his meat with his left hand may think you are a little queer because you use your right. But he won't make fun of you. Govern your own conduct accordingly.

Food. Food is not as plentiful, particularly in the United Kingdom, as it is in our own country. Don't complain about it. You'll be given the best your hosts can provide; in many cases, it will be better than they provide for themselves.

Funds. Travelers checks are recommended. Cadets are encouraged not to carry too much money on their persons.

Property. Each cadet will be responsible for his own property: clothes, wallets, packages, mail, etc.

Correspondence. Schedules are crowded and time usually is at a premium on tour, but cadets should make time to write home frequently, even if only on post cards, to let

relatives and friends keep up with their progress and well-being.

Souvenirs. Time will be allotted on all tours for personal shopping, but don't overdo it. Items should be selected which cannot be purchased at home, and sales slips should be saved to show customs collectors on the return trip.

Formations. To insure the clean-cut, snappy appearance of the group, formations will be a part of the ritual. Some practice drill will be required to condition all cadets to function as a unit at formal ceremonies, of which there will be a considerable number.

Administration. Cadets will be responsible for policing their own quarters while on tour, and a different one will be appointed each day to serve as officer-of-the-day, so that the administration of the group may not be a burden for any one individual.

Entertainment. Most of the programs will be free, but when such is not the case, pay up without fuss or comment.

Memoranda. Keep a memorandum book or diary, and jot down the places you visit and the names of the people you meet. Be sure to keep the names and addresses of your hosts and hostesses. The cause of international fellowship will be advanced if, upon your return home, you write a note of thanks to each of the latter.

INTERNATIONAL DRILL COMPETITION

The Major General Lucas V. Beau International Drill Competition for air cadets is held annually, during the months of July or August, among the United States, Canada and such other countries as may later be invited to participate.

Planning and direction of the meet is the responsibility of a joint committee of ten members, five appointed by the Commanding General, Civil Air Patrol, and five by the Air Cadet League of Canada, co-sponsors of the project.

Purpose

The purpose of the competition is:

To encourage the development of a high degree of proficiency in air cadet drill and stimulate interest in military procedures.

To promote the betterment of international relations by bringing together the youth of the participating countries in friendly competition, a principle which has strong appeal to citizens of the U. S. and Canada alike. The program has the further effect of teaching the participants to get along with others, and

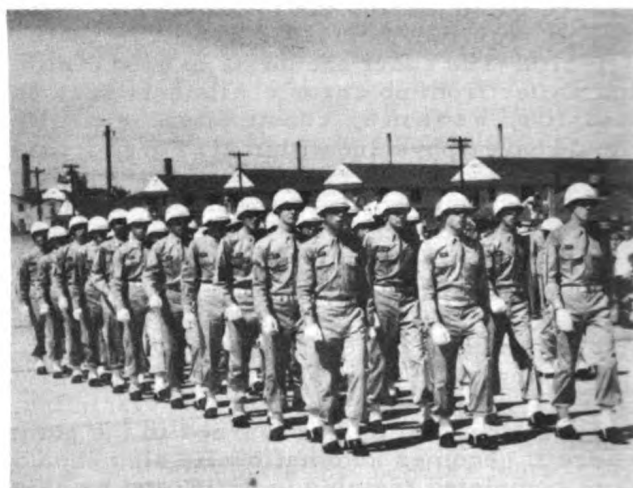


Figure 2-11.--For the honor of the Wing.

gives them the broadening benefits of travel in a foreign land.

Scope

The competition is open to air cadet drill teams of any country which desires to compete, provided its cadet training program is equal to those of the United States and Canada. The Committee will extend invitations to those it deems properly qualified.

Drill Teams

Each participating country will be represented by one all-male drill team, which usually will have won that honor in a series of competitions at sectional levels in their own countries.

Each team will consist of three squads of eleven members each, plus one cadet drill master, and six spares. The spares may also be used as color-bearers in parades, and in such other duties as may be required of them.

To be eligible, a cadet may not have attained his 18th birthday by the April 1 preceding the



Figure 2-12.--A girl cadet drill team.

date of the competition. Girls, although eligible to compete in contests at lower levels in the United States, are not eligible for the international competition, since there are no girl air cadets in Canada.

The drill teams which reach the international competitions usually represent the cream of the youth of their respective countries.

Method of Selection

In the United States, preparations for selection begin as low as the flight level, where competitive drills weed out the awkward and make possible the selection of a team which can represent the squadron. For the honor of representing the wing, the various squadrons then compete in successive drills. Usually a composite team is selected to represent the wing, the members coming from squadrons throughout the state. The resulting wing teams compete against each other in four regional contests, the winners of which go to the national championships, where the team which will represent the United States finally is selected.

In Canada, similar elimination contests are held at the community, provincial, and dominion levels, by the Air Cadet League of Canada, a civilian organization which functions under the unofficial sponsorship of the Royal Canadian Air Force.

Drill Procedure

Each competing team will be allotted a maximum of twelve minutes in which to demonstrate its proficiency on the drill field. The following movements are prescribed for all teams:

1. Assembly (at the double)
2. Count off
3. Present arms
4. Inspection
5. Facings
 - a. Right face (twice)
 - b. Left face (twice)
 - c. About face (twice)
6. Marching
 - a. Mark time march
 - b. Column right (while marching)
 - c. Column left (while marching)
 - d. Rear march (twice)
7. Flank movements
 - a. Right flank (twice)
 - b. Left flank (twice)
 - c. Left oblique (once)
 - d. Right oblique (once)

8. Special or "monkey drill" (to be improvised by each unit and carried out in not more than five minutes)
9. Re-form and report to judges

Judging

The winner of the International Competition will be selected by a board of four judges, appointed by the International Committee, two members to represent the United States and two from Canada. The following four points is taken into consideration in the judging:

1. Military bearing and soldierly appearance of team
2. Execution of standard drill (taken from US IDR)
3. Execution of special "monkey drill"
4. Deportment of cadet commander.

Items 1, 2 and 3 are scored 3 points for excellent, 2 for good and 1 for poor; the cadet commander is scored 1 point if satisfactory, 0 if unsatisfactory, and one quarter point is deducted from the final score for each individual or team error.

Awards

Trophies are awarded to the winners of the International Drill Competition and, in the United States, the National Drill Championship, as follows:



Figure 2-13.--Gen. Beau awards the Stone Trophy.

1. International. The winning team earns the right to hold the Major General Lucas V. Beau Challenge Trophy, donated in 1948 by the Commanding General, Civil Air Patrol, for one year, after which it is again put up for competition. The trophy will be retired in 1957 to the country whose teams have won it the greatest number of times.

2. National. Winners get the Colonel George A. Stone Memorial Trophy, donated in 1949 by Captain Frank Satenstein, of the U.S. Drill Competition Committee staff, to be competed for annually. Winners may hold it until June 30 of the year following their victory.

History

The first International Drill Competition was held, after months of planning by the National Headquarters, CAP, and the Air Cadet League of Canada, at Idlewild Airport, on Long Island, New York, on 7 August 1948.

Thousands of spectators turned out for that spectacular demonstration of one phase of the CAPC program and for the parade, band concert, and air show which also formed a part of the exhibition.

Although they put on a fine exhibition of precision marching and drill, the National Championship Team from Winchester Group 9, of the New York Wing, CAP, lost to the Canadians. The New York team previously had defeated units from Maryland, New Jersey, Connecticut, and Delaware to win the honor of representing their country in the international competition.

The second international held at Toronto, Canada, also was won by an Air Cadet League

team, which out-scored a crack aggregation representing the New Jersey Wing.

The growing interest in the competitions was demonstrated by the fact that twenty-seven of the fifty-one CAP wings sent drill teams to the regional competitions in 1949. The regional finalists, in addition to the New Jersey team, were Michigan, Louisiana and California.

Now we jump from the bottom of the program, where the recruits enter and begin to advance, to the top of the military system in which Civil Air Patrol serves--the program of security for the United States in which not only the Regulars and Reserves but every good citizen has a part.

If these national considerations seem far removed from a cadet class at a little grass airfield, remember this.....

* * *

MILITARY POWER IS BUILT NOT ALONE UPON SUCH TANGIBLES AS BOMBERS AND GUNS, BUT ON THE SKILL TO OPERATE THEM--SKILL SUCH AS NO OTHER NATION HAS. MECHANICAL AND TECHNICAL KNOW-HOW, IN THE HEADS AND THE HANDS OF YOUNG AMERICANS, IS A GREAT RESOURCE IN THE STRENGTH TO PREVENT WAR OR TO WIN IF WAR IS FORCED UPON US. SUCH SKILLS TAKE YEARS TO ACQUIRE. THE DEFENSE PLANS OF THE GREAT AGENCIES NOW TO BE DESCRIBED DEPEND NO LITTLE ON THE PATIENT EFFORTS OF MANY YOUNG STUDENTS ON WHOSE ABILITIES SO MUCH DEPENDS.

Unit III

THE NATIONAL DEFENSE ESTABLISHMENT

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UNIT III

THE NATIONAL DEFENSE ESTABLISHMENT

The armed forces of the United States are unified under a single head with co-equal branches of air, land, and sea. By the National Security Act of 1947, and later amendments, the Department of Defense directs the 3 subordinate Departments of Air Force, Army and Navy.

Earlier, the old War Department could work apart from the Navy as their jobs were separated between land and water. But the lessons of air power in World War II demanded their union, for air is everywhere over the world.

World War II dictated that the Air Force, previously part of the Army, should have its own separate being, while the Navy retained its air carrier forces. Since any air unit in war may have the triple function of supporting the ground forces, flying air cover for ships, and performing its own strategic missions against the enemy, teamwork among all three services is required as never before.

Under the President, as Commander-in-Chief, the civilian control of the armed forces, which our form of government pro-

vides, is through a Secretary of Defense, of cabinet rank. The 3 Secretaries of Air Force, Army, and Navy are not members of the cabinet, but have access to the President.

Military direction is likewise unified in the Joint Chiefs of Staff, which is composed of the Chiefs of Staff of the three services with one additional member as chairman.

Advising the President, the Secretary of Defense, and the Joint Chiefs of Staff are several boards composed of civilians, to assure that the best advice from all quarters shall be available to govern the military policies of the United States.

Advising the three secretaries of the services are many departmental or inter-departmental groups. Thus, the planning and organizing abilities of the nation are harnessed to the job of preventing war if possible, or of winning it if this nation is forced to fight.

Unification of the services--for teamwork, for economy, for efficiency, and for peace insurance is a process which will never end. New weapons and new ideas will lead to constant adjustment and quite possibly to major shifts which cannot be foreseen now.

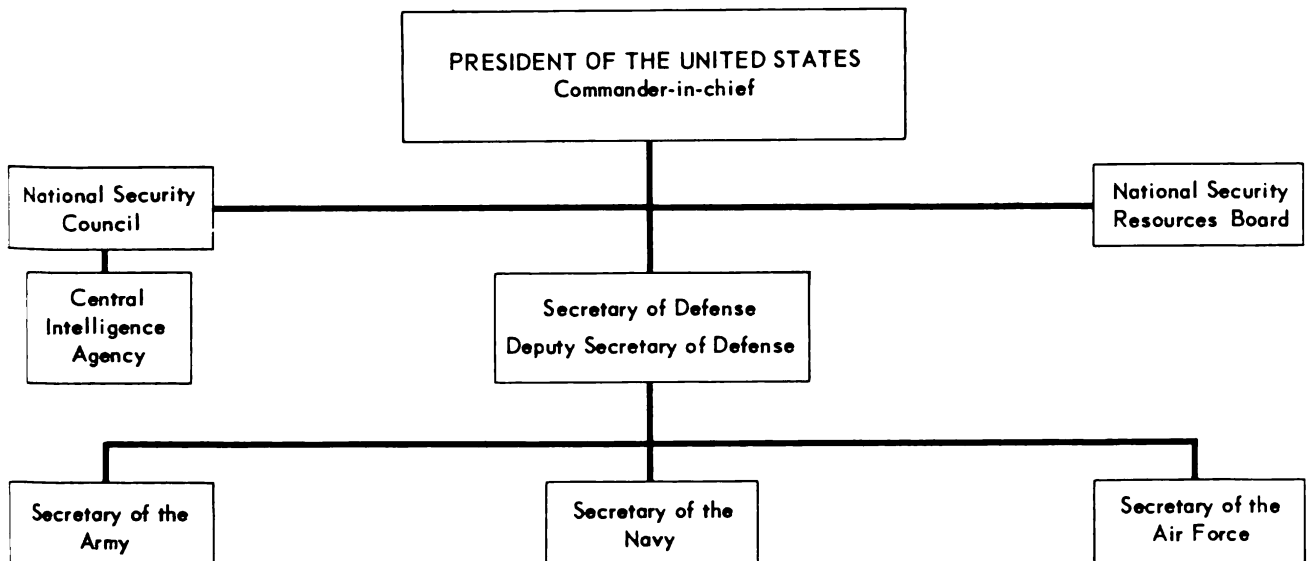


Figure 3-1.--Organization of the National Defense Establishment.

Instructors and students are urged to supplement this text with latest available information about how the services are going beyond the pattern here outlined to meet new conditions.

PRESIDENTIAL ADVISERS

Civilian control of the armed forces is exercised by the President and Congress on the same principle as control of a city police force is held by the mayor and city council.

The President, under the Constitution, is Commander-in-Chief with broad powers. Congress, on advice of the Committees on the Armed Services in both Senate and House of Representatives, has power to determine the maximum strength of the services. The Appropriations Committees recommend how much money shall be voted each year. Congress holds the purse strings.

Wide discretion is customarily allowed the President. In time of war, Congress usually votes extraordinary powers so he can meet situations with instant action.

National Security Council is the top planning and policy group, composed of the President and the heads of the departments and

agencies responsible for various aspects of security. All factors of economic, political, and military preparedness are under constant study. The Council's Secretariat depends upon other Federal offices for most of its information.

Central Intelligence Agency reports to the Council. This unit coordinates military and political intelligence of the various departments and agencies, bearing on security, and is charged with keeping the Council informed on such facts.

National Security Resources Board plans for the coordination of military, industrial, and civilian elements for total mobilization. In case of war, it may be the group to balance military and civilian requirements for manpower, resources, and production.

The National Security Resources Board is composed of the Secretaries of Treasury, Defense, Interior, Agriculture, Commerce, and Labor. Like the National Security Council, it works in peacetime largely through aid of other Federal offices.

Bureau of the Budget, reporting directly to the President, prepares the annual budget, recommending to Congress each January the appropriations for the various Federal agencies for the fiscal year.

DEPARTMENT OF DEFENSE



The Secretary of Defense, subject to the directions of the President, acting upon the advice of the units described, is the working head of the military establishment. He determines general policies and directs the Departments of the Army, Navy, and Air Force through their secretaries.

One of his most important duties is recommending the annual budget. Each of the three subordinate departments submits its own estimates of needs for the year ahead. The Secretary of Defense then recommends what he thinks each of his three departments should get.

Congress can appropriate money and contract authority as its members think best. It can also reduce the amount officials ask,

or approve them unchanged. The Secretary of Defense may find ways to economize so as to spend less than Congress grants.

He is aided by an Under Secretary and Assistant Secretaries. Several policy groups advise him.

Armed Forces Policy Council, under the chairmanship of the Secretary of Defense, consists of the Secretaries of Army, Navy, and Air Force, and the Joint Chiefs of Staff. It considers important policy questions in much the same manner as the National Security Council does for the President.

Joint Chiefs of Staff are the Chief of Staff, U. S. Army, Chief of Naval Operations, Chief of Staff, U. S. Air Force, and a chairman, all appointed by the President. Their main job is determination of military strategy, and the preparation of strategic plans, and logistic plans (supply) to support the strategy.

Under the Joint Chiefs is a Joint Staff, headed by a Director and composed of not more than 100 officers, equally represented from the three services.

Munitions Board, headed by a chairman appointed by the President, is composed of an Under Secretary or Assistant Secretary

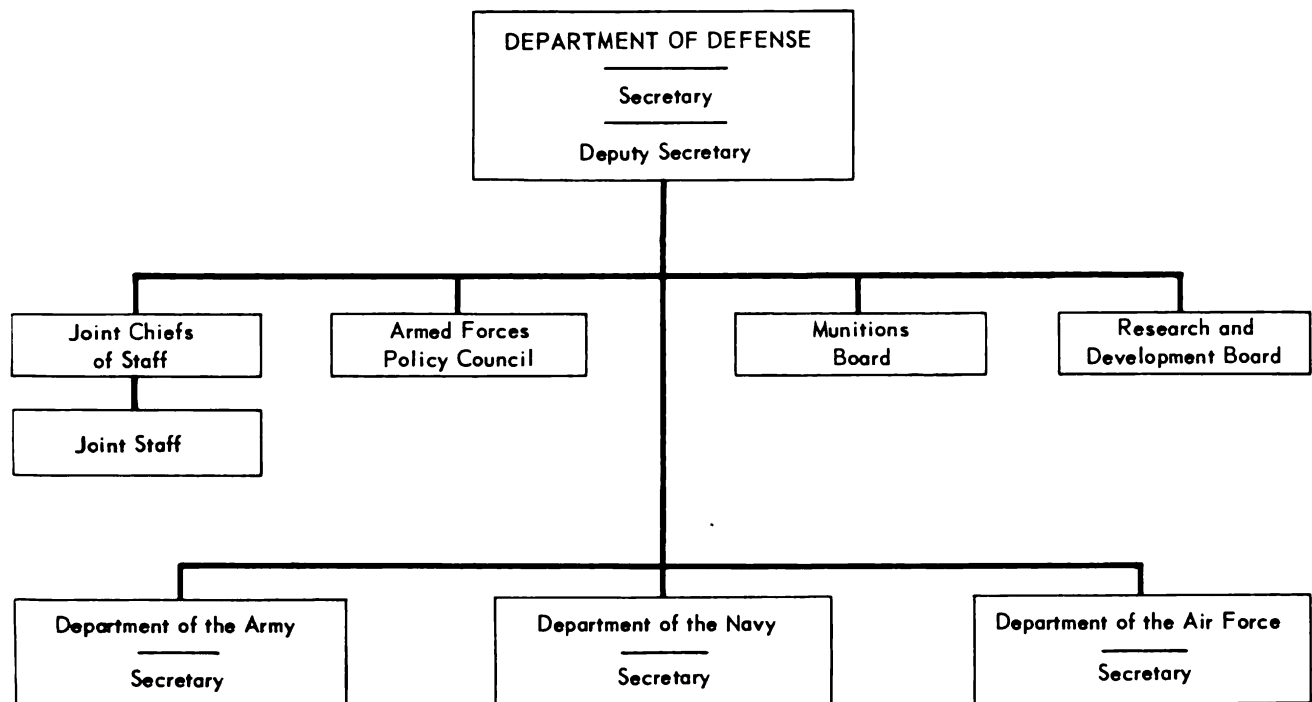


Figure 3-2.--Organization of the Department of Defense.

from each of the three military departments. It plans for the procurement of all supplies from airplanes, ships, and tanks, to boots and pistols. It works within the military establishment, and aids the National Security Resources Board in planning for the combined military and civilian supply in the event of war.

Research and Development Board, under a chairman appointed by the President from civilian life, consists of two representatives from each of the three military departments. It coordinates the task of research on all of the many subjects involved in modern war; also the development of new weapons from the research findings.

Many other groups, old and new, are at work for national preparedness. The Atomic Energy Commission handles all matters in its field, with the advice of a military liaison committee. The National Advisory Committee for Aeronautics long has coordinated aircraft and engine research. The Air Navigation Development Board is another inter-departmental body with functions directed toward peacetime flying, but which are a great aid to military flying as well.

THE THREE SERVICES

Under the Department of Defense, the Departments of Army, Navy, and Air Force

are similar at the top. Each has a Secretary, an Under Secretary, and Assistant Secretaries, appointed by the President. Each has a Chief of Staff (or Chief of Naval Operations in the Navy) with a staff of carefully chosen men to help him.

Common to the 3 Departments are sundry service units such as centralized purchasing of items that can be standardized. More and more functions will be shared as unification progresses.

Each of the services has its own regulations, uniforms, customs, and promotion lists, whereby regular officers advance by seniority and merit to higher grades.

Loss of identity of the 3 services, however, is not within reckoning. Air power is generally conceded to be dominant, over both land and sea, as the terrible might of atomic and other weapons increases year by year.

Yet armies are needed to take and hold ground while the bulk of supplies for overseas must continue to go in ships. Overseas air bases, for example, must be guarded by Army and supplied by Navy. Three-way teamwork continues to be the foundation of American security. Knowledge of the structure and missions of all 3 services is important for all members of the team.

DEPARTMENT OF THE ARMY



Under the Secretary and the Chief of Staff are the General Staff, Technical Services, and Administrative Services, all with headquarters in Washington.

The General Staff has 5 divisions: G-1, personnel and administration; G-2, intelligence; G-3, organization and training; G-4, plans and operations; and the logistics division. Through the staff, the Secretary and Chief of Staff delegate a great mass of detail to responsible commanders.

The Special Staff includes the following divisions:

National Guard Bureau, to work with the Guard in the states and territories.

Executive for Reserve and ROTC. (More about reserves after the outline of the 3 service departments.)

Inspector General, who checks on efficiency and administration.

Civil Affairs Division, including Military Government matters in occupied enemy territory.

Historical Division, to keep track of what happened and profit by experience.

Judge Advocate General's Department, for legal advice and military justice.



Figure 3-3.--The Army's L-15A liaison aircraft.

The Administrative Services are: Adjutant General's Department, responsible for correspondence and records; Office of the Provost Marshal General, for military police; the Chaplains; and the Army Postal Service.

Technical Services include the Chemical Corps, for smoke and incendiary weapons, etc.; Medical Department, including Army hospitals; Corps of Engineers, for construction including rivers and harbors and flood control work; Quartermaster Corps, for non-military supplies such as food and clothing; Signal Corps, for communications and photos; Ordnance Corps, for development of tanks, combat vehicles, artillery, and arms; Transportation Corps, to move personnel and supplies; and Finance Department for pay.



Figure 3-4.--The Navion L-17 is used as an administrative airplane.

The Support Establishment, under direction of the Technical Services, covers the above functions for the Operational.

The Operational Establishment includes the Army Field Forces, Overseas Commands, and Military Missions to other nations. It is under the direct control of the Secretary through the Chief of Staff and General Staff.

The Army Field Forces with headquarters at Fort Monroe, Va., have jurisdiction over the combat training of infantry, field artillery, armored units and airborne troops. (Formerly known as Army Ground Forces, which would be a misnomer now as the Army flies.)

Overseas Commands include the Far East Command and the European Command, each unified for integration of all services under an Army General acting for the Joint Chiefs

of Staff. Others include Alaskan, Pacific, Marianas-Bonins, and Caribbean.

The Continental United States is divided into 6 Army Areas and the Military District of Washington. The Air Force has six identical areas with a numbered air force in each. This facilitates joint maneuvers and plans with the Army.

Aviation plays a major part in Army plans. The Army operates no aircraft of its own except small liaison-type planes, procured by the Air Force, for artillery spotting and for

a variety of uses as "flying jeeps." A number of Air Force units, however, have the primary mission of helping the Army.

Airborne units and equipment, planned to be flown in combat, and "air-transportable" items which might include almost anything, figure very largely in modern mobility of the Army to "get there firstest with the mostest."

Tactical support units, with fighters and bombers to blast the way for the troops, have a vital role. An army cannot advance against an enemy with air superiority.

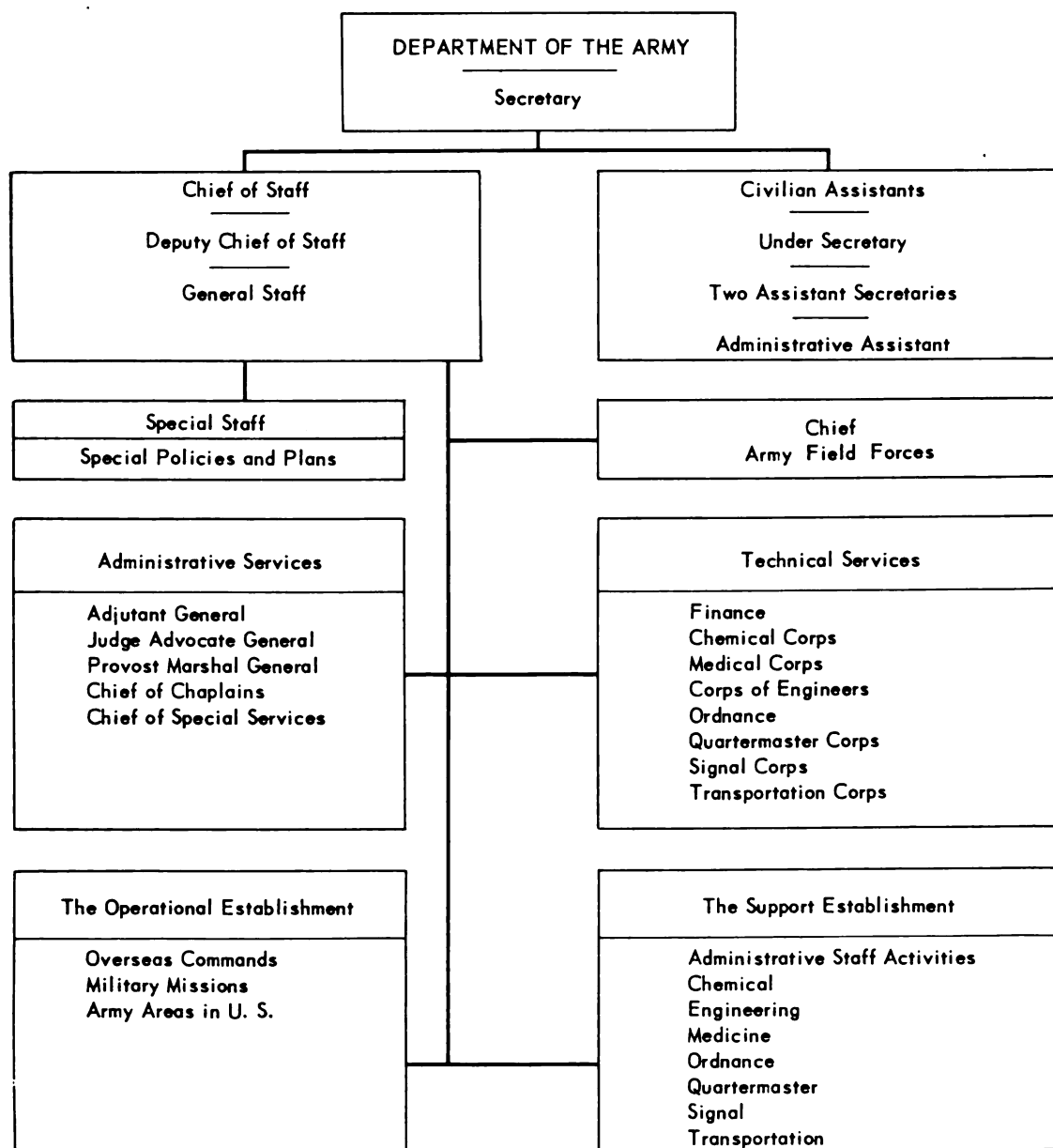


Figure 3-5.--Organization of the Department of the Army.

DEPARTMENT OF THE NAVY

(With Marine Corps and Coast Guard)



EXECUTIVE

The Navy functions through the Operating Forces, backed by the Shore Establishment, all under the Secretary and Chief of Naval Operations.

The big job on shore is "producer logistics" --developing and procuring materials, facilities, and personnel--for the Operating Forces, concerned with "consumer logistics."

At top, the Executive Organization of the Navy is responsible for: (1) policy control; (2) naval command; (3) logistics administration and control; and (4) business administration.

Deputy Chiefs of Naval Operations (DCNOs), along the lines of the Army General Staff sections, are responsible for (1) personnel; (2) administration; (3) operations; (4) logistics; and (5) air. The Naval Inspector General reports directly to the CNO.

The Naval Technical Assistants are the chiefs of the bureaus and offices listed below, and the Commandant of the Coast Guard, when assigned to the Navy.

The names of the several offices indicate their responsibilities: Bureau of Ships, Bureau of Aeronautics, Bureau of Ordnance, Bureau of Supplies and Accounts, Bureau of Naval Personnel, Bureau of Medicine and Surgery, Bureau of Yards and Docks, Office of the Judge Advocate General, Office of Naval Material, Office of Naval Research, and Headquarters, U. S. Marine Corps.

Other offices, in addition to numerous boards, include Budget and Reports, Fiscal Director, General Counsel, Public Relations, Industrial Relations, Industrial Survey, Administrative, and Management Engineer.

THE SHORE ESTABLISHMENT

This organization comprises the field activities of the bureaus and offices of the Navy Department. Function is to supply, maintain,

and support the Operating Forces. Command, under the CNO, includes military command, coordination control, management control, and technical control.

Naval Districts, each under a District Commandant, are for coordination of shore establishments in their respective areas.

Naval Bases, under the Districts, are for command of naval shipyards, air bases, etc., within close proximity.

Naval Air Bases are concerned with logistic support of the Operating Forces.

Other Air Commands are the Naval Air Training Command, and Naval Airship Training and Experimental Command; the Marine Corps Air Bases Command; the Naval Air Missile Test Center and Naval Air Material Center.

Sea Frontiers are part of the Operating Forces responsible for defense, control of shipping, protection of shipping, and anti-submarine warfare within frontier waters. Naval Districts are assigned to appropriate Sea Frontier Commanders for command and coordination.

THE OPERATING FORCES

Under the Chief of Naval Operations and his DCNOs, the Operating Forces consist of the several fleets, seagoing forces, sea frontier forces, district forces, and such other forces as may be assigned.

Major Commands under the CNO include the Pacific and Atlantic Fleets, and the Naval Forces Eastern Atlantic and Mediterranean. Composition of the fleets are vessels and ships of the following types: amphibious, fleet marine, air, battleships and cruisers, destroyers and destroyer escorts, submarine, service force, and training commands. The Mine Force is a type command in the Atlantic only.

Eastern Sea Frontier is under Atlantic Fleet Command and the Western and Hawaiian Sea Frontiers under the Pacific Fleet. But CNO retains military command over the Eastern and Western Frontiers.

While control of the Shore establishment is divided between the CNO and the civilian executives of the Department of Navy, control of the Operating Forces is under a chain of command headed by the CNO.

NAVAL AVIATION

The Navy's traditional role is on the surface of the sea where the great bulk of the shipping during war must still move by surface vessels. Aircraft can fly heavy loads

long distances only at high cost. Vessels must carry the fuel, bombs, and other necessities for air as well as for ground operation.

To control the surface of the water, however, much of the Navy's problem is to protect its ships against attack by submarines

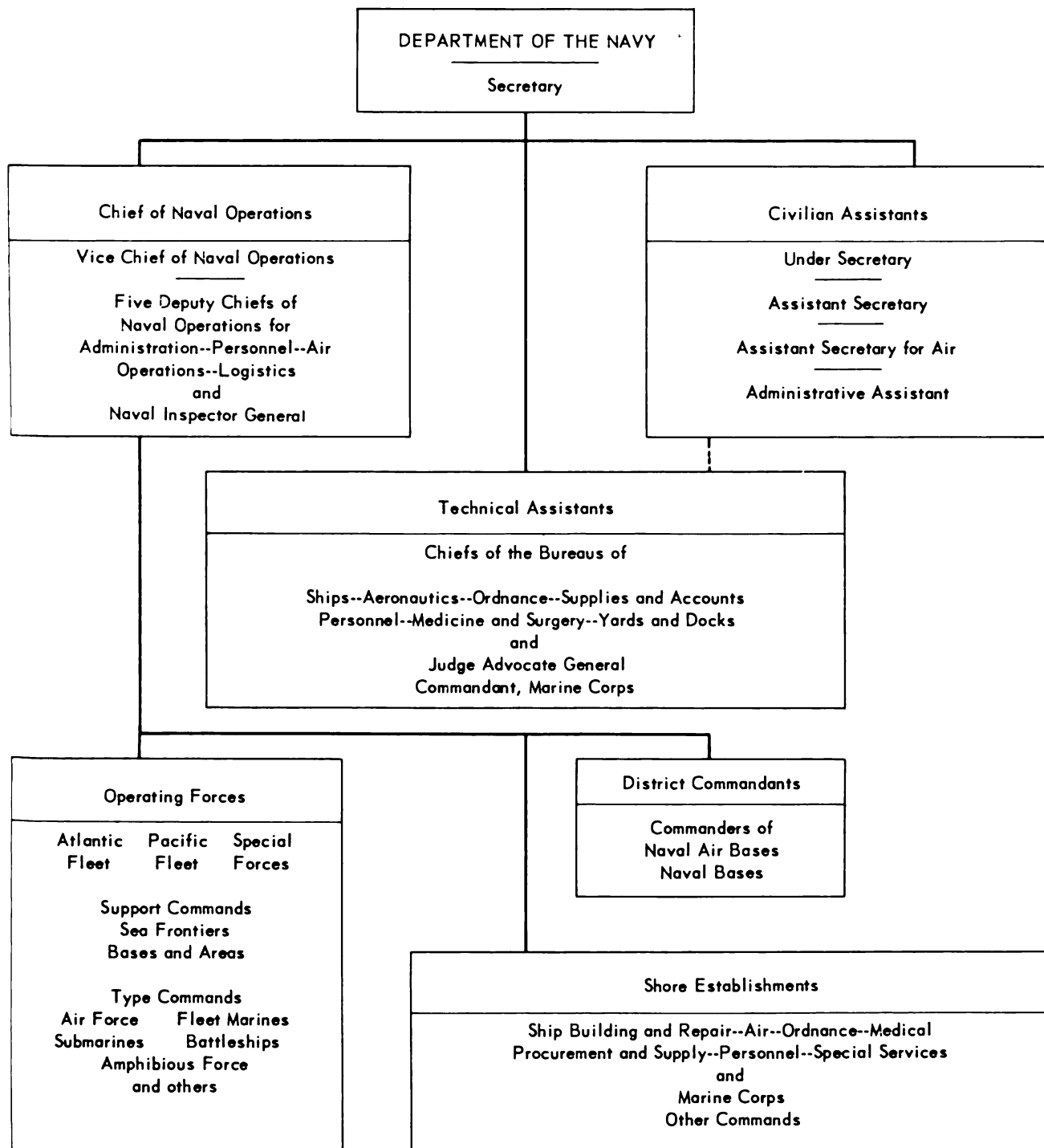


Figure 3-6.--Organization of the Department of the Navy.



Figure 3-7.--USS Hancock, Essex-class aircraft carrier, steams ahead with a deck-load of Grumman Avengers.

and aircraft. As an Army cannot advance against superior air power, our ships cannot operate without an umbrella of airplanes.

The Navy's main striking force is in its aircraft carriers. While the battleships of an earlier day could strike only within the few miles their big guns could reach, a carrier's planes can range long distances over sea or land. A single plane, with bombs, rockets, or torpedos, can deliver as much fire power in one quick blast as a whole flotilla of ships could pack in a broadside.

The Carrier Task Force in World War II became the Navy's main striking weapon not only against the Japanese Navy but against many shore objectives. Since there are no longer any powerful surface navies in the hands of any potential enemy, the problem is not the same as in past wars. The menace to our surface supply lines would be from submarines and land-based aircraft in event of another conflict at the present stage.

In the present active and mothball fleets of carriers and escort vessels, however, the Navy has many floating airfields which might be called into action against coastal targets and as the spearhead of amphibious operations.

A war fought on any other soil but our own would require landing a great mass of troops and supplies by vessels, spearheaded by air attack and airborne landing. For this, the

Navy continues to develop fast jet fighters, light bombers, and patrol planes for carrier take-off.

Land-based transport planes as well as seaplanes and large flying boats also are used by the Navy. Lighter-than-air continues to have a role in surface patrol and anti-submarine warfare. Helicopters are found increasingly useful for courier service between ships, and to shore when it is near, as well as for rescue work.

U. S. MARINE CORPS

As the Marines long have been the tactical fighting forces of the Navy, Marine Aviation is its tactical air arm. While the Army's tactical support is by the Air Force, the Navy has its own air-land-sea team for its own special missions.

Support of amphibious operations, including the flying of close support for the troops and interdiction fire against the enemy, together with some air transport, is the main purpose.

Headquarters of the Marine Corps are under the Commandant, a Marine General appointed by the President for a 4-year term. Although the Marine Corps is an integral part of the Navy, it is a self-sufficient organization with the necessary staff functions and chain-of-command, similar to those of Army and Navy. It may be detached from the Navy for duty elsewhere if necessary.

The Division of Aviation, under the Director of Aviation, is responsible for the Marine air arm in liaison with the Navy.



Figure 3-8.--The jet-powered Banshee, the Navy's most powerful fighter, can cut the air at 600 mph.

U. S. COAST GUARD

A permanent military service, self-contained like the Marine Corps, the Coast Guard operates in peacetime under the Treasury Department for action against smugglers as well as for rescue work. In war, it becomes part of the Navy.

Its functions include international ice patrol, a global weather service, and a system of air patrol stations and light ships. The Coast Guard is under a Commandant appointed by the President. Twelve districts, each under a District Commandant, are located at points along the seaboard, the Mississippi and Great Lakes, Alaska, and Hawaii.

Aviation stations are maintained on the Coasts and Great Lakes, for search, rescue, and aerial reconnaissance. The Coast Guard also maintains many lighthouses, radio beacons, buoys, and fleets of vessels.



Figure 3-9.--The Coast Guard helps keep the sea lanes clear of icebergs.

DEPARTMENT OF THE AIR FORCE



Air power is the dominant arm in warfare by present weapons. At the outset of our war with Japan, sea power with air support played the major role. In the attack on the German homeland, the ground forces advanced with air to blast the way.

Today, there are no surface fleets to meet our vastly superior Navy. We, on the other hand, cannot hope to match the mass armies of a populous land power. But we can build more and better planes than any other nation.

If war comes, the role of the Air Force will not be in support of the older services. Rather, in the initial stages, at least, the main jobs of the Army and Navy will be to support striking power in the air by holding, taking, and supplying the air bases.

Though the three parts of the defense team are co-equal, circumstances will decide which one can best carry the ball at any given time. The other two must run interference until, for some new reason, it is best that the ball change hands.

It may be that the development of missiles and other new weapons will make the air untenable for piloted aircraft. When that is so, present concepts based on airplanes must change just as strategy based on the battleship and the tank gave way to the plane.

Until then, the intercontinental bomber, built to wage atomic warfare anywhere in the world, is America's best insurance that no nation will dare to attack us.

Air power includes the following phases:

Strategic, usually by long-range bombing, to destroy the enemy's capacity for making war.

Tactical, to win battles in a war by gaining air superiority over the battlefield, keeping enemy supplies out, and attacking enemy forces.

Defense, to protect the United States against attack.

Reconnaissance, to observe and map enemy installations and movements from the air.

Transport, to give airlift to "airborne" personnel, equipment, and supplies normally flown in combat and "air transportable" which may include almost anything needed in a hurry.

There is no sharp dividing line between these divisions as all plans are flexible, to use the air arm for all purposes in which it can best serve. The job may seem deceptively simple when a single bomber, manned by a few men, can wipe out a city across the world and return to its base in the United

States. But back of the bomber is a highly complex organization, each part of which is indispensable to the success of the few who fly.

A dozen or more men on the ground are required for every one who flies, for the many tasks of supply, maintenance, communications, weather reports, and over-all administration. This text will outline the organization of a typical air base. First about the command in Washington. . . .

THE DEPARTMENT

As in the Departments of Army and Navy, the Department of Air Force has a Secretary in general charge; an Under Secretary, second in command and in charge of procurement matters, including the purchase of aircraft; and two Assistant Secretaries. One of the latter is in general charge of internal management of the department. The other handles external matters, such as relations with

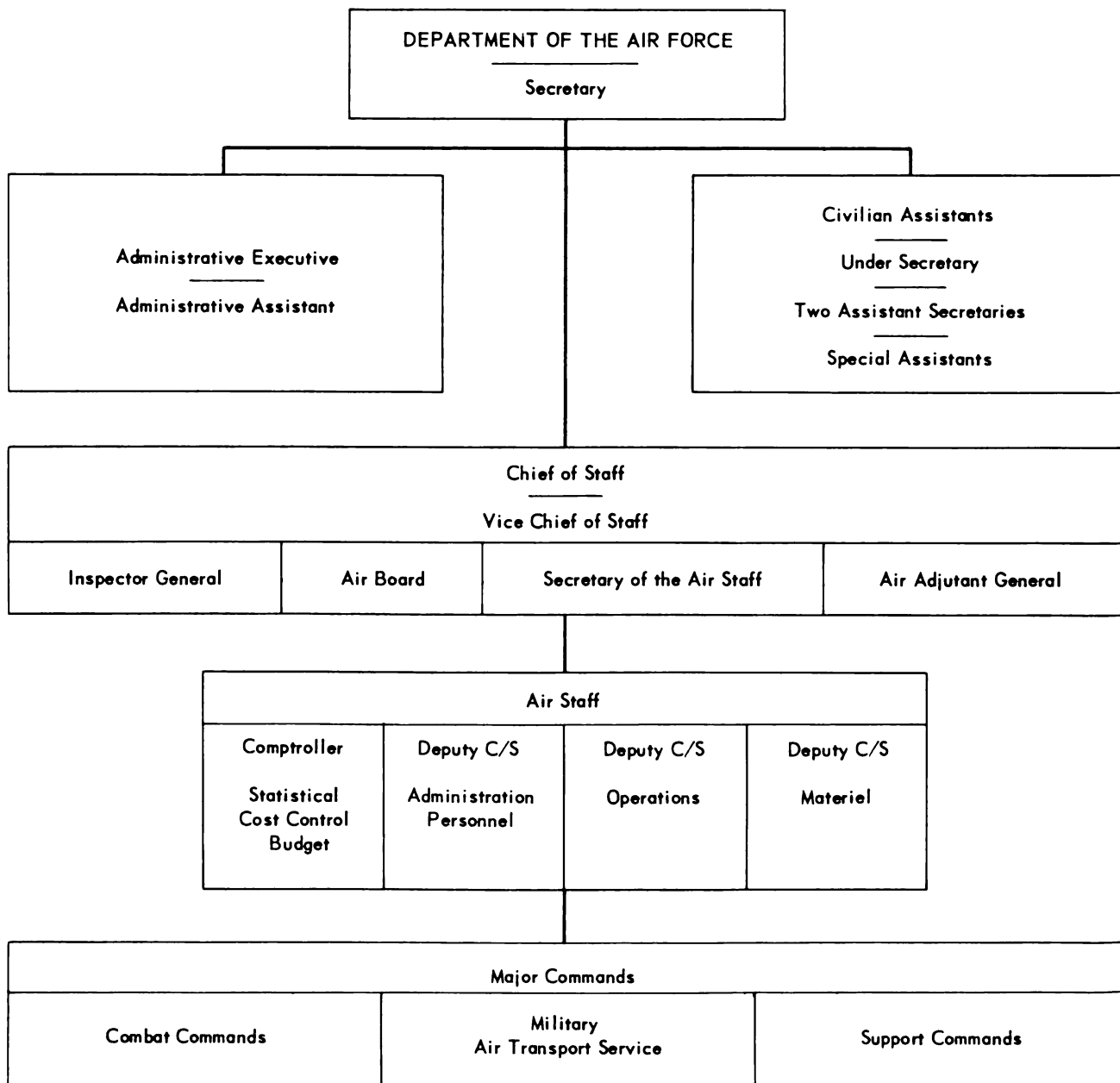


Figure 3-10.--Organization of the Department of the Air Force.

Reserves and civilian organizations including Civil Air Patrol.

(Note that CAP, though a great national organization, is but a small subhead in the directory of defense forces as a whole. This will give an idea of the magnitude of the total task of American preparedness.)

A General Counsel, a Director of Legislation and Liaison, and a Director of Public Relations are included under the office of the Secretary.

The Chief of Staff, under the simple civilian organization of the department, is responsible for all military activities of the Air Force in war or in peace, and represents the Air Force on the Joint Chiefs of Staff. He is aided by a Vice Chief of Staff and an Assistant Vice Chief of Staff.

The latter functions as Chief of the Air Staff to coordinate activities of the deputy chiefs and comptroller.

The Special Staff, under the Vice Chief and Assistant Vice Chief, is responsible for compliance with standards of procedure and op-

eration. It includes the Air Board, which advises the Chief of Staff on policy; the Secretary of the Air Staff; the Air Adjutant General through whom orders are transmitted; and the Inspector General, under whom there are the Air Inspector, Air Provost Marshal, and Director of Special Investigations.

The Air Staff consists of the Air Comptroller, responsible for budget and fiscal affairs, and 3 Deputy Chiefs of Staff in charge of personnel and administration, operations, and materiel.

Personnel and Administration includes both military and civilian personnel, and the offices of the Air Surgeon, Air Chaplain, and Air Judge Advocate.

Operations functions include an Assistant for Programming and Directors of Intelligence, Training and Requirements, Planes and Operations, and Communications. There is a Guided Missiles Group; also a Civilian Components Group, including Air Reserve and Civil Air Patrol.

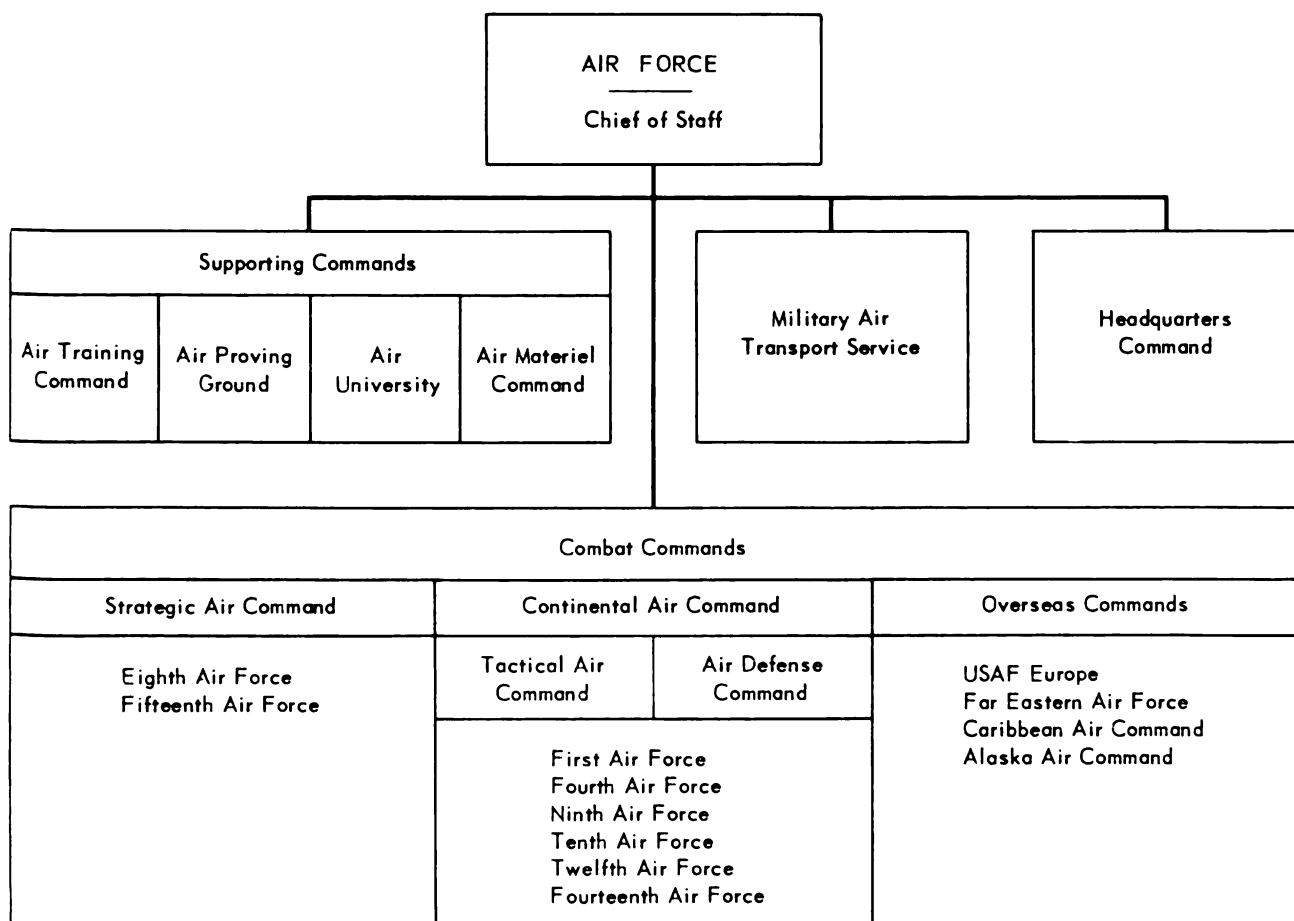


Figure 3-11.--Organization of the Air Force.

Materiel includes Research and Development, Procurement and Industrial Planning, Installations, and Maintenance Supply and Services. There is a Logistic Planes Group; also a Special Weapons Group and a Control Group. The Air Engineer, Air Chemical Officer, Air Ordnance Officer, and Air Quartermaster have functions which their titles suggest.

(Note that the regular staff functions, similar to those in the Army and Navy, provide for administration of the whole Air Force. They assure that the wishes of the Secretary, the orders of the Chief of Staff, and the laws of the President and Congress over them all shall be carried out. Subordinate organizations in turn maintain their own staffs so that each duty is the responsibility of some officer and the total job gets done.)

OPERATING UNITS

Under the top command and staff are the following units which actually fly the planes, develop new ones, and train the men who fly.

The Support Commands.

Air Transport Service.

The Combat Commands.

The Combat Commands are of course the end product toward which all other activities must go.

Support Commands

Support Commands are Air Training, Air University, Air Proving Ground, and Air Materiel.

Air Training Command is responsible for the training both of flight and ground personnel . . . the pilots, bombardiers, and navigators of the Air Force and liaison pilots of the Army, as well as the ground personnel and students from foreign nations.

Some of the training is done at special schools but every command of the Air Force is responsible for the training of its own men and for their continued proficiency, under standards set by the Training Command.

It never stops. An airman who understands this year's texts can be far out of date in another year unless he keeps pace with the fast advance of new things in his profession.

Air University supervises and operates schools for Air Force officers and prepares publications on Air Force doctrine.

Air Proving Ground is for testing of weapons and equipment and for development of operational techniques . . . how to put equipment to best use.

Air Materiel Command has the multiple-billion-dollar job of purchasing. ("Materiel" is a French word which refers to all the material things as distinguished from "personnel.") It issues equipment and supplies to the other commands. It overhauls, stores, and repairs materiel. Air Force Materiel Areas and the Air Force Institute of Technology are under this command.

Military Air Transport Service

To fly passengers and cargo anywhere in the world, MATS operates for the entire defense establishment. Some transport planes also are flown by the Navy, Marine Corps, and the various Air Force Commands for their own special needs.

Normally in peacetime, MATS operates regular flights like a well-run airline, to carry passengers and cargo on regular routes and schedules in the United States and among overseas bases. It is ready for emergencies such as the Berlin airlift, whereby a major city was supplied during blockade. In war, speed is of decisive importance. Even a single plane load of some critically needed supplies might turn the balance of a battle.

In addition to transport duties, MATS is in charge of ferrying aircraft. It controls and operates ports of aerial embarkation. It evacuates sick and wounded from theatres of operation to the United States. The organization is planned for quick expansion in wartime.

Geographically, the command is divided into an Atlantic Division and a Pacific Division. There are 5 services, organized in



Figure 3-12.--MATS operates its own world-wide air service for the benefit of the entire defense establishment.

MATS headquarters and in each of the 2 divisions.

Air Transport Service, over a global network of routes.

The Flight Service, to provide data for charting and control of military aircraft in the United States.

Air Rescue Service controls rescue activities, provides trained rescue units, and keeps liaison with Coast Guard and Navy.

Air Weather Service maintains a worldwide weather network from the Arctic to the tropics, for safety of all military flight.

Air Communications Service maintains an integrated system of communications and air-navigation facilities for operations of military aircraft.

Air charts are also provided by MATS.

Combat Commands

In the continental United States, the combat units are organized under the Strategic Air Command and the Continental Air Command. Overseas, 4 commands are operating in as many broad regions. Under the combat commands are the "numbered air forces" ... 1st, 2nd, etc. ... which are assigned to regions or special global duties.

Strategic Air Command is organized to conduct long-range combat or reconnaissance anywhere in the world at any time. Sea search and antisubmarine operations on a global scale also are included.

This is the command that operates the heavy bombers. As this is written, three of the numbered air forces are under it. Theory of SAC is that the best defense is an immediate and devastating counter-attack.

Continental Air Command directs the work of the Air Defense Command and Tactical Air Command. Under it are 6 of the numbered air forces, each assigned to an area of the United States. The areas are the same as the 6 Army regions for coordination between the services. Air Reserve and Air National Guard activities (see section on this subject to follow) also are coordinated through CONAC.

Air Defense Command is for protection of the Continental United States. It plans for interception of any airborne enemies through warning networks and the dispatching of fighter planes. Practice alerts and maneuvers are held in peacetime to test the system.

Tactical Air Command plans for operations in support of ground and amphibious operations. For air supremacy over battlefields, for isolating the area from enemy reinforcement and supply, and for attack on points of

resistance, the fighters and bombers have become indispensable to the troops.

The dropping of airborne troops and supplies by parachute and the landing of assault planes within the enemy lines are among the rules of tactical air power. Gliders were employed in World War II but their further use is doubtful. Helicopters are being developed for courier and rescue work, evacuation of wounded, and other purposes. Vertical ascent and descent can put them where nothing else can go.

TAC works closely with the Army Field Forces and the amphibious forces of the Navy in planning. Airlift for maneuvers is furnished through the numbered air forces under CONAC.

The Overseas Commands, while under Air Force management, are under the unified commands wherein a single Commander-in-Chief, whether an officer of the Army, Navy, or Air Force, is in control of all United States military forces within his area and who reports directly to the Joint Chiefs of Staff.

(An exception is made in the case of strategic air units which may operate in any part of the world, when so ordered, directly under the Chief of Staff, USAF.)

The U. S. Air Forces in Europe, including the Mediterranean and Middle East, and the Far Eastern Air Forces operate largely in occupied territory. The Caribbean Air Command works with the Navy's Atlantic Fleet for defense of the United States from attack. Like the Air Forces in Europe, it aids friendly South American nations in developing air forces. The Alaskan Air Command is of great importance in defense against trans-polar attack. Much experimental work is being done on Arctic operations.

Commands, Wings, and Groups

At the operating end the Air Force is divided into commands. They, in turn are subdivided into numbered air forces, air divisions, wings, groups, squadrons, and flights.

Several numbered air forces, under the Strategic, Continental, and Overseas commands, retain their identity from World War II. They may be split into Air Divisions (each comparable to an Army Corps) or may be organized in Wings reporting directly to the respective numbered air force.

A Wing is comparable to an Army division; a group to a regiment; and a squadron to a battalion.

The usual peacetime organization is centered in a Wing Base where a Wing Command and staff is placed over a single group.



Figure 3-13.--Consolidated-Vultee B-36.



Figure 3-14.--Boeing B-29.

The Group is the unit by which air strength is customarily measured. It contains as many aircraft as can be effectively controlled by one commander in operation. A fighter group in peacetime may have 2 squadrons of 25 aircraft each, and a total of 600 men. A bomber group will have fewer aircraft but more men, as the big planes take more servicing.

Types of groups include very heavy, heavy, medium, and light bombardment; fighter; fighter-bomber; reconnaissance; and troop carrier. In the entire Air Force, a balance must be struck so there are enough groups (together with specialist squadrons for communications, etc.) to support each other for the total job.

Primary and secondary air combat needs determine this balance which must be revised frequently as new weapons and new conditions develop. Primary functions are strategic,

tactical, and air defense. Secondary functions include anti-submarine, air-sea rescue, weather forecasting, mapping, etc.

The Squadron is a compact, easily controllable fighting unit with both air and ground echelons to facilitate rapid movement from



Figure 3-15.--Northrop Flying Wing, Bomber.



Figure 3-16.--Boeing B-47 Stratojet Bomber.

base to base. The air echelon will normally include all the pilots, navigators, bombardiers; engineering, communications, armament, intelligence, and medical officers; plus some enlisted men and officers for each section. The ground echelon consists of a few officers and the remaining men.

Organization within the squadron may be divided into 3 components--administrative, technical, and tactical. Each of these 3 components are further divided into air and ground echelons.

When 2 or more squadrons are combined in a group, the group headquarters personnel join with one of the squadrons for mess, administration, and housekeeping functions. As well as air and ground, the group may contain its own "third echelon" of service units,



Figure 3-17.--North American B-45, four-jet bomber.



Figure 3-18.--Lockheed F-84 all-weather fighter.



Figure 3-19.--North American F-86 jet fighter.



Figure 3-20.--Paratroopers leaving a Fairchild C-82 "Flying Boxcar."

including the otherwise separate base headquarters and service squadron in group headquarters.

Air Force Base

Actual air operations must be from air bases where planes can take off and return. For this, the whole great structure of the Air Force has been erected.

The base, whether a permanent installation in the heart of our continent, or hastily constructed in a theatre of war is a city in itself. It must be self-contained in all equipment and people to do its job. But it is dependent on vast shipments of supplies--fuel and ammunition for the aircraft; food for the men--without which operations soon would cease.

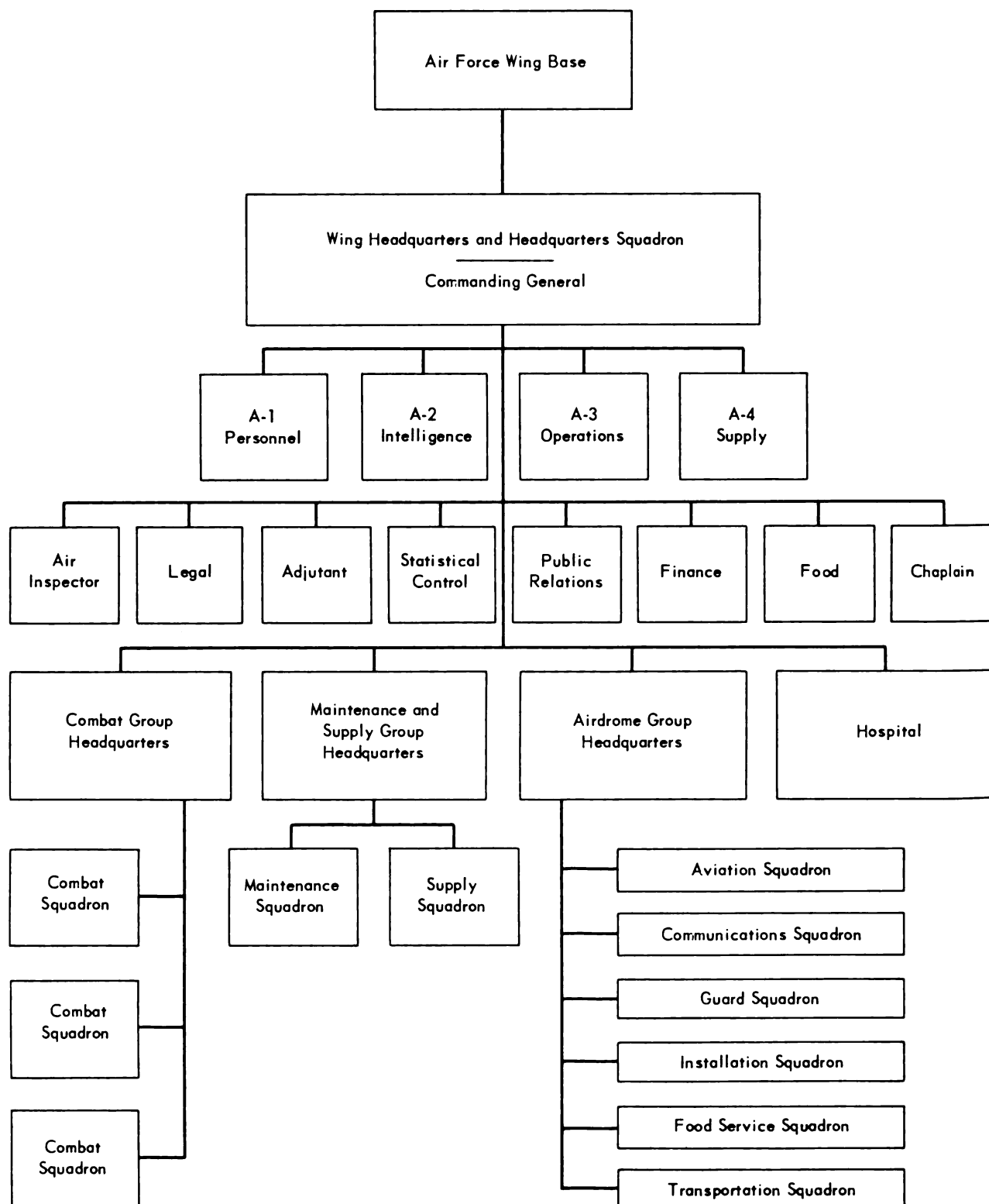


Figure 3-21.--Organization of the Air Force Wing Base.

The most conspicuous structures at the airfield are the hangars for storage and maintenance of planes, and the control tower where air traffic is directed by lights and radio signals. On a large base, other facilities may extend for miles.

A fleet of autos and trucks is maintained for transportation. If the base is on a body of water, boats must be operated as well; rescue launches must stand by at all times. The base has its fuel tanks, fire-fighting apparatus, warehouses, machine shops, target ranges, and ammunition dumps.

Like a city, it must have its own system of streets and utilities, including electricity, water, and sewerage. For the personnel, not only houses, barracks, and mess halls must be provided but a base hospital, theatre, chapel, exchange (retail store), and recreational areas.

Human as well as material factors are of the utmost importance in an Air Force where teamwork is essential every step of the way. Pleasant living conditions for personnel and families are fundamental to morale.

The functions of a base may vary. A given field may be headquarters for a unit of heavy bombers on the one hand or fighters on the other. It may be an air transport terminal. The main function may be flight or ground training, or some specialized activity. Or there may be a combination of activities at the one site.

Command and staff organization at the base is under the same headings as that of higher units and of Air Force headquarters itself. There is a Commanding General, Deputy Commander, and the A-1, A-2, A-3, and A-4 staff sections, together with an Air Inspector, Provost Marshal, etc. (See chart for organization of typical Wing Base.)

Assignments are such that if a command is taken from one base and transferred to another, personnel remain for sundry house-keeping assignments so the orderly conduct of the base continues.

The Wing chart is for a combat group. A training group or a supply group would function under like command and staff organization.

FUNCTIONS IN COMMON

After a study of the Army, Navy, and Air Force, it is appropriate to return to the fact of unification. Here are some of the points where functions previously divided are coming together.

Joint Command, as before noted, is in the Joint Chiefs of Staff, who determine broad policies by majority vote and may delegate authority to the services. The Joint Chiefs may establish a unified command in any area, as in the Far East.

Personnel policies are being mapped by the Personnel Policy Board in the Office of the Secretary of Defense. A common qualification system; equality of opportunity between the services; career opportunities for women in military and civilian capacities; and the rights of racial minorities are among the policies determined.

For military justice, legislation would set a uniform code for the 3 services and the Coast Guard. A joint Army and Air Force Clemency and Parole Board reviews general courts martial cases.

Joint Personnel Security Board can make a single clearance as to the loyalty of employees of companies working for the services.

Armed Forces Information and Education Division has been consolidated for all services and many uniform courses adopted.

For command and staff education, the National War College and the Industrial College of the Armed Forces operate for all departments.

Junior officers' training continues at the Army's West Point and the Navy's Annapolis, but a certain percentage are assigned to the Air Force from each graduating class. A United States Air Academy is proposed.

Information schools are combined at Carlisle Barracks, Pennsylvania. Personnel of all services are included in such special schools as the Navy Photographers Mates School, Pensacola, Florida, and the Army Chemical Corps School.

Joint operations include frequent joint maneuvers with 2 or more branches of the service participating.

Weapons Systems Evaluation Group, under the Secretary of Defense, works out specialized weapons for the services, and standardization where possible.

Proving ground facilities at Banana River, Florida, serves all branches for testing of long-range missiles.

Service pay has been placed on a uniform scale.

Medical Services Division in the Office of the Secretary of Defense is working out consolidations. A separate branch for aeromedicine is maintained.

Transportation is divided so MATS, operated by the Air Force, handles all air transport; Army, all land transport including highway, rail, waterway, and pipeline; and Navy, all sea transport.

Armed Forces Day, on the third Saturday in May, is set aside for the Army, Navy, Marines, and Air Force, instead of having separate observances for each.

WOMEN'S SERVICES

Modern warfare demands such a vast effort from a nation that the work of the male half of the population is not now enough. Large numbers of women are needed both for military and civilian duties.

The Civil Air Patrol pioneered this trend. In the first World War, there was little place for women in the military except as nurses and a few "Yeomanettes" of the Navy. At the outset of World War II, CAP began as a completely co-educational organization open to both sexes on their merit.

Some of the women of CAP rose to leading posts in the women's auxiliaries later developed by the services. During the war, the Army, Navy, Marine Corps, and Coast Guard had women in uniform both as officers and in enlisted grades. Opportunities for peacetime duty or reserve status continue. The several Medical Corps also commission their nurses.

The wartime Air Force included the Women's Auxiliary Service Pilots (WASPs) who ferried military aircraft between airfields. This group was disbanded, but Army WACs continued on Air Force assignments.

After the war, the Air Force was given its regular WAF organization parallel with the Army's WACs and the Navy's WAVEs.

If war comes again, it may be anticipated that all-out mobilization will be required among able-bodied Americans of both sexes. Civil Air Patrol has no women's division as it continues to admit women in all capacities, including that of Wing Commander, on their individual merit, as men are admitted. Opportunity is likewise equal between young women and young men as CAP Cadets.

CIVILIAN COMPONENTS

The so-called "civilian components" of the armed services are the Reserves and Guard, composed of patriotic citizens who spend part of their time from their regular civilian occupations in training as officers and enlisted men, so as to be ready for emergency.

The nation can not support regular full-time forces at more than a small fraction of the numbers needed in war. Hence the "Minute Men," from Colonial times, have been the means of springing to arms when security is threatened.

Air war, which makes instant attack possible, calls for instant mobilization. Voluntary training of civilians can offset the tragedy of "too little and too late."

Each one of the services has a program of Organized and Volunteer Reserve activity, as well as officer training in the colleges. In addition, the National Guards of the various states maintain ground and air units, closely related to the Army and Air Force respectively.

National Guard

In each state, under the Constitutional powers of raising militia, and even when the states were still colonies, Guard units have been maintained as a defense force at the call of the Governor. Since 1903, the guards have been jointly supported by state and national governments as the first unit to be mobilized in emergency after the Regulars.

In mobilizing before World War II, the Guards were nationalized and called to duty a year before the United States entered hostilities. In the states, they were replaced by a temporary system of State Guards, discontinued after the National Guard units returned.

Under the National Guard Bureau, the Guard units in the 48 States, Alaska, Hawaii, Puerto Rico, and the District of Columbia enjoy a high degree of autonomy. Facilities, established over the years, include large, well-equipped armories in cities across the country.

The typical unit is a Guard Regiment, housed in an armory where the members report once a week to put on their uniforms for drill and training. This is part of the Army's mobilization plan.

The Air National Guard, before World War II, was organized in less than half the states, with an observation squadron in each. After the war, the Air Force decided to make the Air National Guard the immediate striking force among its reserve units; hence encouraged organization in every state and in the territories.

As this is written, the Air National Guard plan is for a complement of 27 groups with 84 squadrons and a total of 58,000 men. Of the squadrons, 72 are to be fighter outfits and the other 12 light bombardment. Transport planes also are provided.

The Guard units practice with bombers and jet fighters so as to be ready for action as defense forces in case of attack on the United States. They are based at hangars at major airfields, comparable to the Guard's Regimental Armories.

Civil Air Patrol cooperates with the Guards in the states. Although not formally subject to call except by its own Air Force command, CAP units have frequently mobilized with other defense, relief, and law-enforcement forces on a Governor's request in emergency such as flood.

Reserves

These are a larger force of veterans and others, in varying states of organization and training, next to be called in case of war.

Previously under differing laws, the Reserves of the several services have been placed on a more nearly uniform basis as to their status. To the extent that funds are available, reservists are paid and receive other benefits for regular drill or training and attendance at summer camps. Others are permitted to donate their time, but may thus achieve promotions and qualify for retirement pay.

Army Reserve is composed of 3 basic types of units. The Table of Organization and Equipment (T/O and E) Units, include: (a) complete roster of officers and enlisted men; (b) 80 percent officers and a cadre of enlisted; and (c) complete roster of officers only. Table of Distribution (T/D) Units augment existing Army units. There are also Training units for personnel unable to participate in T/O and E or T/D units.

Five categories of units are prescribed, as to the number of paid training assemblies that can be held in a year. Army Reservists are classed as Active if they put in a minimum of 30 hours annually; Inactive for those who request such assignment after 20 years of service.

An aviation activity of the Army Reserve is the training of rated Liaison Pilots who may fly at Army expense in planes rented from local airport operators on prescribed practice missions.

Naval Reserve is divided into an Organized Reserve and a Volunteer Reserve, established not only at coastal sites along the oceans, the Gulf, and the Great Lakes but inland as well. The Navy, like all other services, draws personnel from all the states.

Each air squadron is organized to go with its planes, and completely man an aircraft carrier. The volunteer reserves will need

more training to meet wartime standards.

Marine Reserve likewise is divided into Organized and Volunteer components. Air squadrons are included to train for the role of tactical support to Marines in combat.

Air Force Reserve is in 5 phases:

1. Mobilization Assignment Training Program for reservists given definite assignments to which they will report on "M-day."

2. Air Force Reserve Training Corps (AFRTC) composed of organized squadrons equipped with aircraft.

3. Corollary Unit Program in which reservists serve part time in assigned Table of Organization capacities in Regular Air Force units.

4. Volunteer Training Unit Program of volunteer squadrons meeting to hear training lectures, etc.

5. Extension Course Program, for home study training.

To retain active reserve status, each officer and airman in the United States Air Force Reserve must earn a minimum number of credit points each year.

Civil Air Patrol is a means to earn such credits by service as instructors to the various CAP units. An increasingly close tie between reservists and CAP has been developing.

R.O.T.C. programs are maintained in many colleges by Army, Navy, and Air Force. Various plans are offered whereby students will receive federal benefits for undertaking military training along with their other studies, to graduate with commissions in the respective services.

Civil Air Patrol is logically listed here as one of the reserve forces since it functioned in part as an actual combat force in World War II antisubmarine patrol. Its functions in emergency are set forth in unit VI.

IMPORTANT NOTE: All CAP units should supplement the foregoing notes on the armed services with information about military units and installations in the CAP unit area and in the state. To prepare for cooperation in emergency, all CAP units should be well informed on the units with which they may work. Meanwhile there are many peacetime chores for CAP to do on behalf of the Air Force, including search and rescue, recruiting, public relations, and participation in observances and open house days at airfields.

Unit IV

TEAMWORK

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UNIT IV

TEAMWORK

INTRODUCTION

The aim of all military training and organization is success in battle. The American way is to attain this end by willing teamwork rather than compulsion.

This is a principle that applies in any endeavor. . . a ball game, a factory, or a school. But each must have its own rules so that each member of the team will do his job right and on time, and so that new members can fit into a familiar pattern.

Military life, therefore, is not to be considered as something foreign to civilian ways. It must be somewhat more formalized than most civilian pursuits, because mistakes or failure of any part of the system may cost lives.

Military training is a good background for civilian work. It sharpens awareness to responsibility. It is particularly good in preparing for aviation. Slipshod performance or violation of common-sense rules for flight, can cause serious consequences.

Differences between military and civilian ways have grown far less than in earlier times, when soldiers and sailors did most of their fighting far from centers of population. In modern war, the whole nation has a part in the vast job of production and supply so that it is hard to tell where the civilian order of things ends and the military begins.

An airman on a field in an interior area may, in a matter of hours, be fighting thousands of miles away. The enemy, too, may suddenly make any area a scene of disaster or even of combat.

The more closely civilians and the military can work together in peacetime, the better prepared they will be for all-out teamwork in emergency. . . and the better the chance of building our defenses so no nation will dare provoke us to war. The Civil Air Patrol, in which civilians learn the military rules, is a nation-wide influence toward full national teamwork.

LEADERSHIP

The American way is to lead rather than coldly command. Our people do the most when left to exercise their own native initiative and know-how. Yet, initiative cannot run unchecked. Then there would be no team, but only a mob working in all directions.

So our way is removed alike from the regimentation of foreign dictators who dare not risk anything but unthinking obedience, and from disorder at the other extreme.

The Military Triad, which is the basis for order, is Honor, Courtesy, and Discipline. All must have *Honor*. It is an unforgivable sin for any military man to lie, for only on truth can the right plans be made and executed.

Courtesy is a token of mutual respect which breeds respect between officers and men, as between military personnel and civilians.

Discipline is necessary up to the highest command where the General disciplines himself as well as those under him. By accepting discipline in the ranks, a recruit does not become subservient to his Commander, but to the military law which is common-sense law, founded upon centuries of experience.

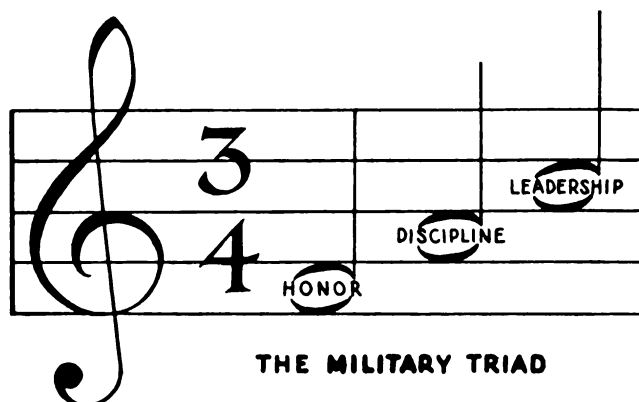


Figure 4-1.--In the realm of music, the combination of three notes into a harmonious chord is called a TRIAD.

It is an old doctrine that an officer, asked whether he wants his men to love, fear, or respect him properly answers that he wants respect. He wins respect through kindness, and decency at all times, and by cheerful acceptance of circumstances and of orders from higher headquarters, as difficult as they may sometimes be.

By long and patient example... by fair praise and reward for good service, without favoritism, and by fair punishment for bad, without personal animus... an officer proves his fairness. In short, a good leader is the sort of person everyone may hope to be.

By right decisions, he impresses all his men of his good judgment so that when the test comes in crisis they will follow him with confidence.

The relationship between officers and men is friendly without undue familiarity. The old caste system between officers, non-coms, and enlisted men, was never so rigidly observed in this country as in most others.

During the past war, the close teamwork of all within a bomber or on a flight line or operations office brought the rank and file close together. The high standards of technique required among enlisted men of all grades, tended to narrow the gap between officers and men, and enabled many enlisted men to qualify for commissions.

But soldierly traditions, which have stood through many centuries, are yet applicable to our modern way in which there cannot be too much courtesy and honor.

MILITARY CUSTOMS

Everyone in uniform must observe certain customs and manners, or else seem a poor soldier. It is as discourteous to fail in such observances as it would be to violate rudely the customs observed in a church or school. Customs are part of the military way of preparing all personnel to fit readily into the life of any camp or base, whether at home or half way around the world.

The proper manner of addressing a military man is by his full title. One speaks to higher officers by their grade, such as major or by "sir." Non-commissioned officers should be addressed as "sergeant" or "corporal." A warrant officer is mister. Airmen (or privates) without title are called by their last names or may be addressed as "soldier."

In the Navy, officers up to lieutenant commander are called "mister." The commanding officer of a ship is called "captain" regardless of rank.

























PAY GRADE	SERVICE			
	Army	Air Force	Navy	Marine Corps
7	(NONE) RECRUIT	(NONE) PRIVATE	 SEAMAN RECRUIT	(NONE) PRIVATE
6	(NONE) PRIVATE	 PRIVATE FIRST CLASS	 APPRENTICE SEAMAN	 PRIVATE FIRST CLASS
5	 PRIVATE FIRST CLASS	 CORPORAL	 SEAMAN	 CORPORAL
4	 CORPORAL	 SERGEANT	 PETTY OFFICER, 3d CLASS	 SERGEANT
3	 SERGEANT	 STAFF SERGEANT	 PETTY OFFICER, 2d CLASS	 STAFF SERGEANT
2	 SERGEANT FIRST CLASS	 TECHNICAL SERGEANT	 PETTY OFFICER, 1st CLASS	 TECHNICAL SERGEANT
1	 MASTER SERGEANT (FIRST SERGEANT)	 FIRST and MASTER SERGEANT	 CHIEF PETTY OFFICER	 MASTER SERGEANT

Figure 4-2.--Insignia of the services, enlisted personnel.

Insignia of the services should be studied and known. Naval officers are designated by stripes of gold braid on their sleeves when the blouse is worn; otherwise, by metal insignia comparable to Army and Air Force on the collar. A commander, for example, wears the silver oak leaf, the equivalent of the rank of lieutenant colonel.

Saluting should be snappily rendered. It is done by raising the right hand smartly until the tip of the forefinger touches the lower part of the cap, or a spot just above the right eye. The lower arm is parallel to the ground; upper arm inclined at 45 degrees; fingers and thumb tightly together, palm flat. On completion of a salute, the arm is snapped back to the side.

Established custom has been for soldiers to salute all officers, on sight, within 30 paces and before coming within 6 paces, and



































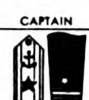


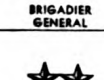


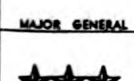
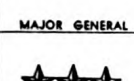

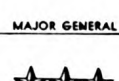
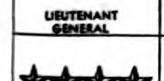
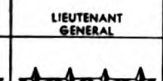

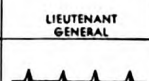



Army	Air Force	Navy	Marine Corps
			
WARRANT OFFICER JUNIOR GRADE	WARRANT OFFICER JUNIOR GRADE	WARRANT OFFICER	WARRANT OFFICER
			
CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	COMMISSIONED WARRANT OFFICER
			
SECOND LIEUTENANT	SECOND LIEUTENANT	ENSIGN	SECOND LIEUTENANT
			
FIRST LIEUTENANT	FIRST LIEUTENANT	LIEUTENANT JUNIOR GRADE	FIRST LIEUTENANT
			
CAPTAIN	CAPTAIN	LIEUTENANT	CAPTAIN
			
MAJOR	MAJOR	LIEUTENANT COMMANDER	MAJOR
			
LIEUTENANT COLONEL	LIEUTENANT COLONEL	COMMANDER	LIEUTENANT COLONEL
			
COLONEL	COLONEL	CAPTAIN	COLONEL
			
BRIGADIER GENERAL	BRIGADIER GENERAL	COMMODORE	BRIGADIER GENERAL
			
MAJOR GENERAL	MAJOR GENERAL	REAR ADMIRAL	MAJOR GENERAL
			
LIEUTENANT GENERAL	LIEUTENANT GENERAL	VICE ADMIRAL	LIEUTENANT GENERAL
			
GENERAL	GENERAL	ADMIRAL	GENERAL
			(NONE)
GENERAL OF THE ARMY	GENERAL OF THE AIR FORCE	ADMIRAL OF THE FLEET	

Figure 4-3.--Insignia of the services, officers.

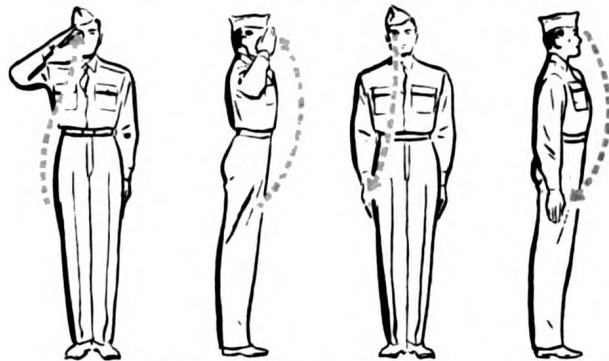


Figure 4-4.--The salute.

for any officer to salute higher or equal rank. The one of lower rank holds the salute until acknowledged by salute from the other.

Modern practice is to eliminate the salute between personnel while away from the air.

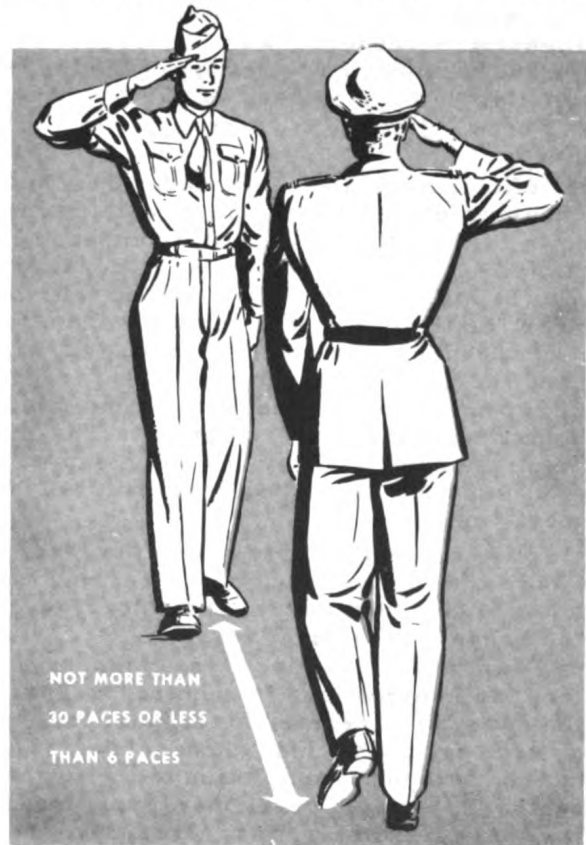


Figure 4-5.--You must know not only how to salute, but whom and when.

base or military establishment. One should learn the custom prevailing in the area and know the exceptions such as parades, reviews, and Military Police.

Saluting is not done on the run; one slows to regular pace. A driver at the wheel of a moving vehicle does not salute. Other occupants may salute from a sitting position. There is no saluting in athletic costume or when one has both hands full of packages. Salutes may be exchanged in civilian clothes on recognition.

Indoors, the salute is not usually rendered; one comes to attention, rather. When an officer enters the room, it is customary for the first one who observes him to give the command, "attention," whereupon all stand until the officer puts them "at ease" or "at rest."

Likewise, outdoors a group of men apart from a formation will stand at attention and all will salute when an officer approaches. In formation, only the one commanding the unit will salute.

An officer paying a boarding visit to a vessel of war or transport is met at the gangway by the officer of the deck.

The salutes to be exchanged upon boarding and leaving a vessel of war are prescribed below and conform to regulations of the United States Navy. All members of the Army and Air Force visiting a vessel of war will conform.

All officers and men, whenever reaching the quarter-deck either from a boat, from a gangway, from the shore, or from another part of the ship, will salute the national ensign. In making this salute, which will be entirely distinct from the salute to the officer of the deck, the person making it will stop at the top of the gangway or upon arriving upon the quarter-deck, the same salute will be rendered in inverse order. The officer of the deck will return both salutes in each case, and shall require that they be properly made.

All officers in the party salute the colors, but only the senior renders or returns the salutes, other than that to the colors, given at the gangway of a naval vessel.

In reporting formally to a commanding officer, an enlisted man is required to knock on the door; await permission to enter; march two paces from the desk; and salute. The salute is held until completion of the formal report. The soldier or airman explains his purpose. For example, "Sir, Airman So-and-so has the Sergeant's permission to speak to the Company Commander." The officer returns the salute while seated.

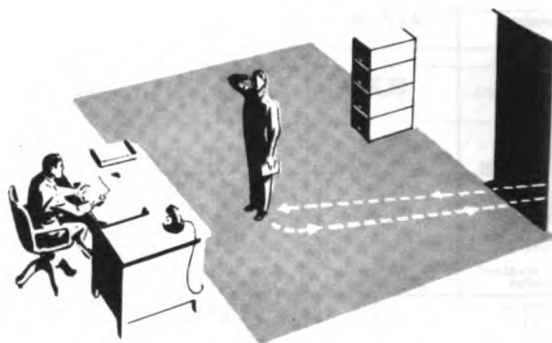


Figure 4-6.--Reporting to a commanding officer.

The man is put at ease; transacts his business; again comes to attention; salutes; does about face; and marches out in a soldierly manner.

There are many other customs to learn. In walking, the one of higher rank is on the right. In entering an airplane, vehicle, or boat, the lower ranking men get in first and the highest ranking last. On leaving, the order is reversed. Otherwise, the higher ranking come first.

The wear of garments--conditions under which the full Class A uniform will be worn and other such matters--may be prescribed by commanders of bases.

The flag is always saluted when it passes by or when one passes it in uniform. Also, it is customary to face the music, stand at attention and salute while the band is playing "The Star Spangled Banner," or the bugle blows "To the Colors," "Escort of the Colors," or "Retreat."

The evening ceremony of retreat is cherished. As the sunset gun is fired and the flag is slowly lowered for the night, all personnel stop their work, and stand reverently at attention while the National Anthem is played.

The uses of the flag--how and when to display it, fold it, and handle it--also are prescribed in full detail.

Remember that proper observance of customs--the salute, the courteous use of the word "sir," and other ways which the soldier

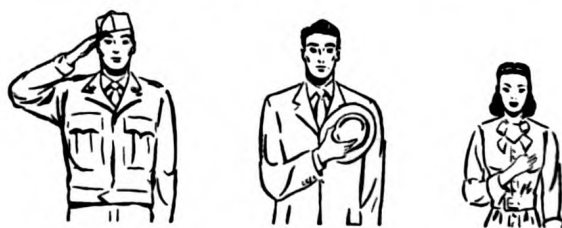


Figure 4-7.--Saluting the Flag.

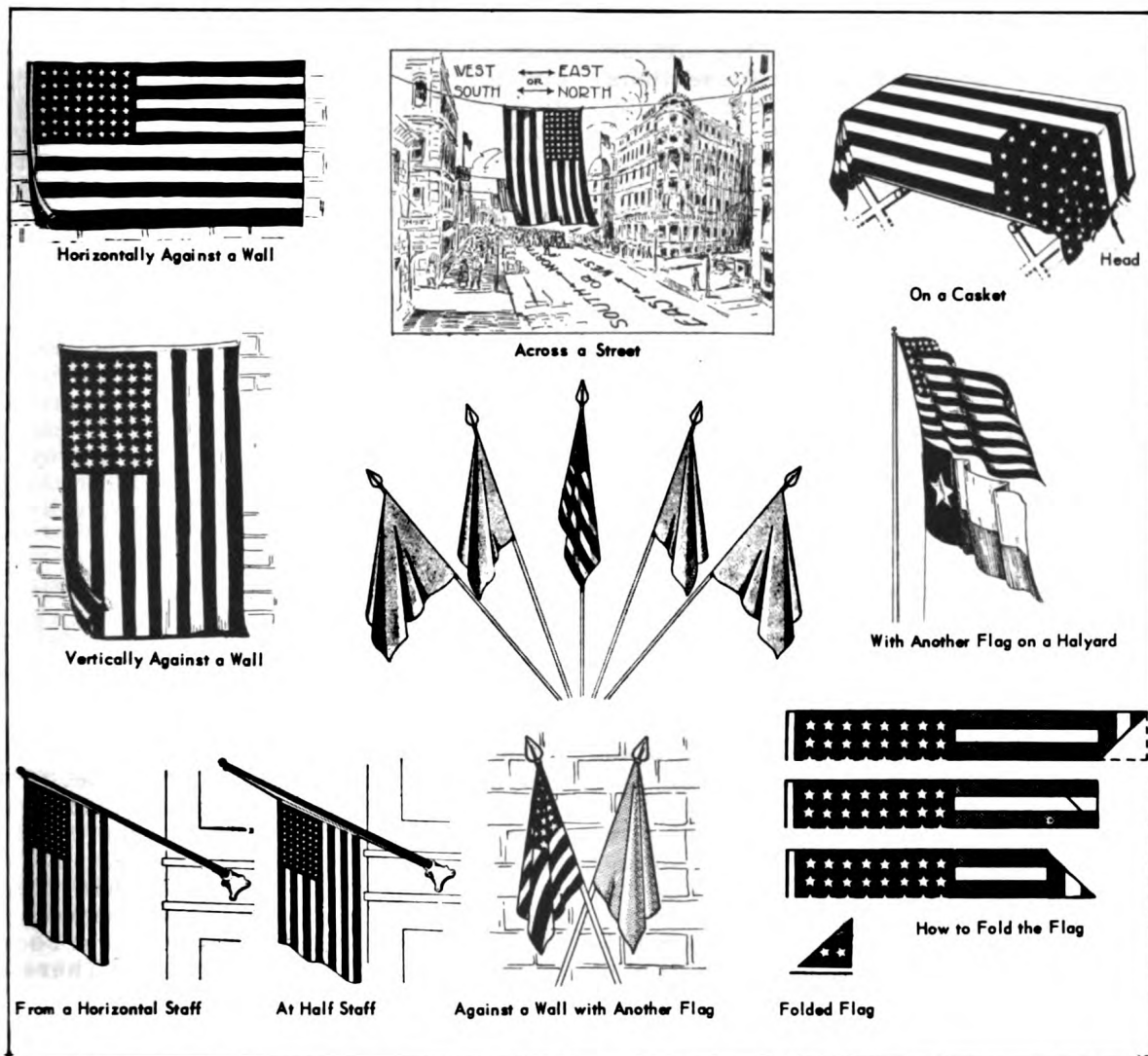


Figure 4-8.--Displaying the Flag.

follows--are a mark of character. To be worthy of wearing the uniform, one must attain the dignity of conduct that goes with it.

REFERENCE

FM-22-5 Leadership, Courtesy, and Drill.

COMMAND AND STAFF

In any military unit, there is a commander, chief assistant, and his staff of officers, each assigned to one of the specialized duties it takes for the unit to do its work.

The *Commanding Officer* of a unit is responsible for all matters within his command. He is held solely responsible for training,

discipline, administration, supply, and operations. In order to provide the *Commanding Officer* with assistance in meeting these responsibilities and with certain specially skilled advisers, he is given a Staff. Members of that Staff do not exercise command in their own name and the orders which they may issue are issued in the name of, or by order of, the *Commanding Officer*. The various Staff Officers relieve the *Commanding Officer* of detail work by gathering, arranging, and estimating for him such material and data as he requires to reach the decisions involved in carrying out the responsibility of his command. The Staff Officers will function further in their specific fields as representatives of the *Commanding Officer* to see that his decisions and orders are

being carried out properly. Much staff work is accomplished by inspections of the various units within the command. These inspections are made both by the Commander and by Staff Officers.

It is an obvious duty of a staff to be thoroughly familiar with orders and directives received from higher authority and to see that they are properly executed. This is an administrative detail and it should not be allowed to interfere with the planning and other creative work of the Staff, the objective of which is to fit the command to meet whatever responsibilities may be placed upon it. A Staff should aid the Commander in carefully estimating his potential local problems and, within the general policies laid down from above, prepare plans and training program and required material for whatever may be foreseen.

The CAP Wing Command--Each CAP Wing has boundaries coterminous with the State after which it is named. The Wing Commander is fully responsible for all CAP matters within his Wing, both tactical and administrative. As outlined in paragraph 1 above, the Wing Commander will utilize his Wing Staff to assist him in meeting these responsibilities and a proper distribution of work among the Wing Staff members is required if the responsibilities are to be fully and efficiently met. The Wing Staff is to aid the Wing Commander in preparing plans for the Wing and subordinate units and to see that those plans are properly carried out throughout the Wing. A Wing Medical Officer, for instance, is interested in the progress and efficiency of Group Medical Officers and aids them in conducting properly the responsibilities of their office.

The Group--In addition to functioning as a part of the planning and administrative staff

of the Group Commander, each Group Commander and his Staff have responsibilities similar and parallel to those outlined previously. It will be noted that as we progress further down the chain of command into the lower echelons, there is less responsibility for policy determination and interpretation and a heavier requirement for detail execution of specific instructions emanating from higher authority. The Group Commander and his Staff, under the directives emanating from the Wing, guide and assist the Squadron Commanders in preparing for and executing the responsibilities charged to their organizations, both in training and in the conduct of missions. Here again the Staff plans, cooperates, and inspects, first as a group and then as individual Staff members, in the specific field in which their primary responsibility lies.

The Squadron--In the Squadron Staff, designations are: S-1, Personnel; S-2, Intelligence; S-3, Operations and Training; S-4, Supply. These are four key Staff Officers. In addition, there are usually special Staff Officers such as, Communications, Transportation, and under combat conditions there might be an Armament Officer, a Photographic Officer, a Mess Officer, etc.

Staff Relations--a. The Commander has a Staff to assist him in the proper command functions with which he is charged. All correspondence, orders, etc., whether they are related to supply, missions, or training, are addressed to the Commanding Officer because he is responsible for everything. Therefore, he sees all correspondence and his Adjutant marks it for the proper Staff Officer (to be passed on to the Section Staff Officer through Commander and Executive). When the Staff Officer takes action, he prepares it for the signature of the Commanding Officer or a

CHIEF ASSISTANTS TO THE CO

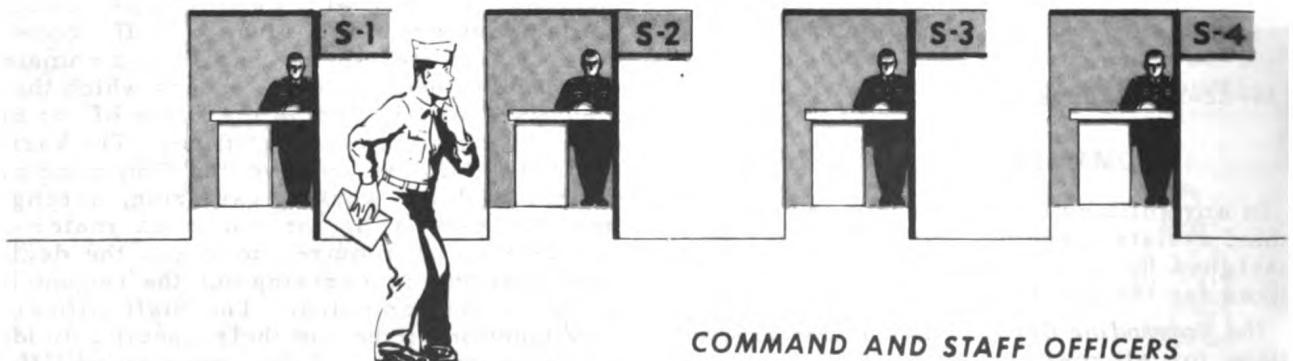


Figure 4-9.--The Squadron Staff.

designated Staff Officer. This is military procedure. The Commanding Officer should organize his Staff to best advantage and consider the personal qualifications and professional qualifications of men best suited for the Staff. For example, the Operations Officer should be an older, more experienced pilot who will see that inexperienced pilots are not sent on missions beyond their capabilities.

b. The Commander should attempt to keep his policies as definite as possible so that his Staff may handle routine matters without having to discuss each detail with the Commander. Particularly, there should be no misunderstanding as to the degree of authority and responsibility of each Staff Officer. It should be known definitely whose work the Staff Officer is supervising and he should coordinate his plans with other Staff members.

c. When the Commander so desires, he may assign more than one staff duty to an officer. For example, during training, one officer may act in the capacity of both Supply Officer and Transportation Officer. Then, if the unit were called upon for active missions, the Commanding Officer might designate a separate Transportation Officer, and he might require this Transportation Officer to report to the Supply Officer as his assistant, which would leave Transportation under Supply. Or, the Commander might have Transportation report to the Executive.

d. The Chief of Staff--Within CAP, the Executive Officer functions as a Chief of Staff and there shall not be designated a Chief of Staff within a CAP unit. In business parlance, the Commanding Officer will be the President of a Corporation and the Executive Officer the General Manager. While the President is responsible for the enterprise and very largely decides matters of policy, the General Manager is responsible for the operation of the business under those policy determinations and makes such decisions as are necessary within the policy determined.

e. Command Channels--Normally, the Flight personnel discuss operations with the Flight Commander. The Flight Commander takes the matter up with his higher authority. If the Commander expects full cooperation from his Staff, he will usually talk over operations matters with his Operations Officer, and Supply matters with his Supply Officer, rather than ignoring them. Each officer should be familiar with the duty relating to his Staff assignment.

Duties of the Unit Commander--a. He is responsible for the tactical efficiency of the unit; that as a result of training, both by prac-

tical experience and theoretical instructions, all personnel of his unit are capable of performing such missions as may be assigned in a satisfactory manner.

b. He is responsible for the training of all the personnel, both commissioned and enlisted assigned or attached to his organizations for duty; he is responsible that such schools are conducted as may be necessary to train the personnel properly. He is responsible that all Officers within the unit are assigned to duties that they are best qualified to perform.

c. He is responsible for the preparedness for service of his organization; that it is properly equipped and ready to move out on proper notice; that as a result of proper training the personnel are prepared to perform the duties required of them;

d. He is responsible for the administration of his unit; for the discipline therein; for the proper performance of their duties by all of his subordinates, both commissioned and enlisted; for the mess, barracks, and adjacent areas; for the clothing of the enlisted personnel; for the health of the command; for the proper preparation and disposition of all correspondence and reports; and for all matters of an administrative nature.

e. He is responsible for all public property assigned or issued for the use of the unit or the personnel thereof; for the proper care and preservation of such property; for the proper use thereof; and he is personally responsible for all such property as may be in use in his organization.

Duties of the Executive Officer--a. The Executive Officer is also second in command of the unit, and hence temporarily succeeds automatically to the command when the Commanding Officer is absent or otherwise ceases to function, except when manning tables include a deputy commander.

b. He is the principal assistant and adviser to the Commander. He may transmit the decisions of the Commander to appropriate Staff Officers for preparation of the necessary orders, or transmit them in the form of orders to those who execute them. He is the principal coordinating agency of the command. He performs the following specific duties:

(1) Formulates and announces policies for the general operation of the Staff.

(2) Directs and coordinates the work of the general and special Staff in respect to:

(a) Activities of the sections within the general and special Staff groups;

(b) Relations between the general and special Staff groups;

- (c) Relations between the general and special Staff groups and the troops.
- (3) Keeps the Commander informed of the situation of the command as to location, strength, morale, training, equipment, supply, and general effectiveness.
- (4) Receives decisions from the Commander and takes the following action:
 - (a) Makes such additional decisions as may be directed by the Commander and gives necessary instructions to the Staff in furtherance of these decisions.
 - (b) Allots the detailed work of preparing plans and orders, and when time permits coordinates the resulting drafts and submits them to the Commander for approval.
- (5) Takes steps to insure that all instructions published to the command are in accord with policies and plans of the Commander.
- (6) By personal observation, and with the assistance of the general and special Staff sections, sees that orders and instructions of the Commander are executed.
- (7) Makes a continuous study of the situation with a view of being prepared for future contingencies.
- (8) Assembles routine Staff section reports and after their approval by the Commander forwards required copies to higher headquarters.
- (9) In general, the Executive Officer meets the administrative functions for which the Commanding Officer is held responsible and does so in the name of the Commanding Officer.

S-1, Personnel--The Adjutant handles all routine correspondence, except that pertaining to orders and instructions concerning operation missions, in accordance with regulations and approved policies of the higher command and his Commander. In cases for which no policy has been established, he initiates action to secure from the Executive Officer a policy covering such cases. Again in business parlance, the Adjutant would be the Office Manager operating the detail and routine functions of the office under the General Manager and providing housekeeping functions for the Staff members, such as filing systems, clerical help, stationery, and supplies.

The personnel officer coordinates and supervises the personnel procedures and activities required to provide the unit with the personnel necessary for effective unit operation. He is also directly concerned with factors such as morale and health which affect the efficiency and productivity of the

individual member on his job assignment. As a staff officer he is charged with staff planning and the formulation of policies.

S-2, Intelligence--The Intelligence Officer, working closely with S-3, gathers information necessary for operations and training missions; supervises preparation and use of codes; and is responsible for protection of classified information. Facts about the enemy are the main point in wartime. S-2 is concerned, also, with protecting his unit against espionage and against any disloyalty or subversive activity.

S-3, Operations--This staff section is in charge of training the unit and directing its flights; assigns missions; keeps a file of all official instructions on aircraft; maintains flight records; and determines weather conditions where the unit's planes are flying.

S-4, Supply--This section obtains and distributes supplies, including aircraft; also, it supervises maintenance of equipment and salvage operations.

Other Functions--In the intricate operations of an air organization, there may be an Air Inspector, Engineering Officer, Transportation Officer, Photographic Officer, Training Officer, Public Information Officer, Provost Marshal, Medical Officer, Chaplain, Communications Officer, Mess Officer, etc.

In large units, there may be an Assistant Operations Officer and other assistants in the important staff functions. In small units, several duties may be placed upon one officer.

Temporary duty as Officer of the Day or Airdrome Officer, designated by an arm band, may be assigned for general supervision.

By all these specialized assignments, the commanding officer may be sure that every job will be in the hands of trained personnel ready to carry out his orders.

In Civil Air Patrol, the same general pattern follows except that the training function predominates in peacetime. The senior CAP unit, in effect, is operating an attached cadet unit. The CAP Wing, Group, or Squadron needs its S-1 for records and Personnel. There is normally not much in the regular S-2 line; a Public Information Officer is more to the point. S-3 is more for training than operations. S-4 is important. The plane maintenance will be in the hands of a local fixed base operator as well as the CAP unit.

In the Air Force as in CAP, the exact organization chart of a unit will vary with its function. Yet any trained airman or CAP member will find a familiar ordering of things, wherever he may report for duty.

REFERENCE

CAP Reg. 35-6 Duty assignment of CAP officers.

AF Manual 35-2 Personnel classification and duty assignment.

ARTICLES OF WAR

All military personnel are governed by the Articles of War, like a set of laws which define offenses and their punishment. A recruit who has behaved as a civilian, under the civil and criminal laws of nation and state, is not likely to find himself in trouble with military law.

But it has long been a custom to read the 121 Articles occasionally to the troops so all will know their responsibilities. Our present Articles of War date largely from 1806, patterned after English rules of much earlier origin.

Following are some of the misdeeds enumerated:

Article 54, giving false name or age when enlisting.

Article 64, wilfully disobeying a superior officer.

Article 65, striking or otherwise acting in an insubordinate manner toward a non-commissioned officer.

Article 61, being absent without leave.

Article 58, deserting.

Article 81, aiding the enemy.

For minor acts of disobedience, Article 104 lets the commanding officer inflict company punishment, which may be merely a reprimand, but may include temporary loss of privileges, extra fatigue duty, or hard labor for as much as a week.

For more serious offenses, a court-martial is convened and the offender is tried, acquitted or convicted, and sentenced if guilty, much as in a civilian court. Military forces must have their own system of justice rather than let personnel be subject to civilian arrest and detention.

Crimes, including murder and robbery, come under military justice as do the military offenses.

For arrests and general military law enforcement, the Air Force has its Air Police, as the Army has Military Police, and the Navy has its Shore Patrol.

In Civil Air Patrol, the Articles of War do not apply in peacetime to civilian volunteer personnel. When a member is so unruly as to make continued membership undesirable, it is best to prevail on him to resign. If

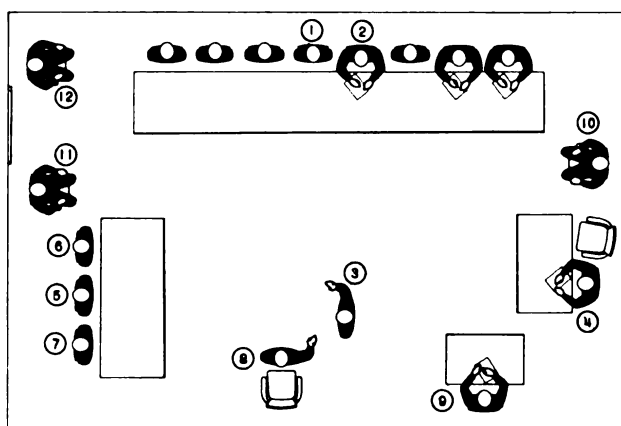


Figure 4-10.--A General Court Martial. Diagram shows (1) president, (2) law member, (3) trial judge advocate, (4) assistant trial judge advocate, (5) defense counsel, (6) individual counsel, civilian, (7) accused, (8) witness, (9) reporter, (10) court orderly, (11) guard, and (12) spectator.

criminal acts are involved, it is a matter for the courts rather than for CAP.

To assure a fair hearing, however, in a case where a member wishes to make formal answer to charges, a CAP unit may convene a special board and reach a decision with court-martial procedure as a guide. Such cases have been rare in CAP and should be avoided if possible.

REFERENCE

"The Manual for Courts-Martial," U.S. Air Force, contains the Articles of War with interpretations and detailed rules for courts martial. The corresponding Army manual is similar.

MILITARY DRILL

Drill has several purposes. It enables troops, whether in large bodies or small, to assemble and move as disciplined units rather than as a mob of individuals. It is a means of impressive ceremonies. It teaches on the parade ground the discipline and response to commands that will prevail in battle.

More than that, drill brings the members of a unit, shoulder to shoulder, into a sort of teamwork which can be precise only if every one does his part. A mistake by one may spoil the entire movement. That, too, is vital in war.

As a novice dancer is awkward with a partner and gradually finds rhythm, a recruit with a dozen or a hundred partners may feel

a misfit at first. But when he learns to move in unison with his fellows, he is uplifted by the feeling that he marches in step, not only with men, but with an ideal.

American drill, as other military ways, has been shaped to the American way of doing things. Gone are the old "squads right" and "squads left," long a holdover from the tactics of Frederick the Great. Modern drill is not set rigidly in squads of eight men, but is flexible so any number can form in line, column, or mass and can maneuver by simple rules.

The Position of the Soldier, the first to learn, is military bearing; not artificially stiff, but straight and alert.

At the command "attention," the soldier brings his heels together with a click and stands with shoulders back, chest arched, eyes front, and chin up. Arms are at the sides, each thumb at the trousers seam. Toes are pointed outward at an angle of 45 degrees.

At the command "at ease," the soldier can relax, but is not to talk. "At rest" permits him to talk. In either case, one foot is to be kept in place.

At the command "parade rest," the left foot is to be moved 12 inches to the left, and the right hand clasped with the left behind the back.



Figure 4-12.--A line of correctly positioned feet on parade is the basis of smart rank and file.

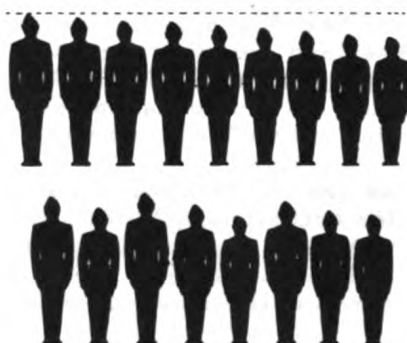


Figure 4-13.--When the heights of men vary, it is correct for them to form into ranks as in upper illustration; never as those shown in lower picture.

On "fall out" troops may leave their positions in formation, but must stay nearby to resume their places at the command "fall in."

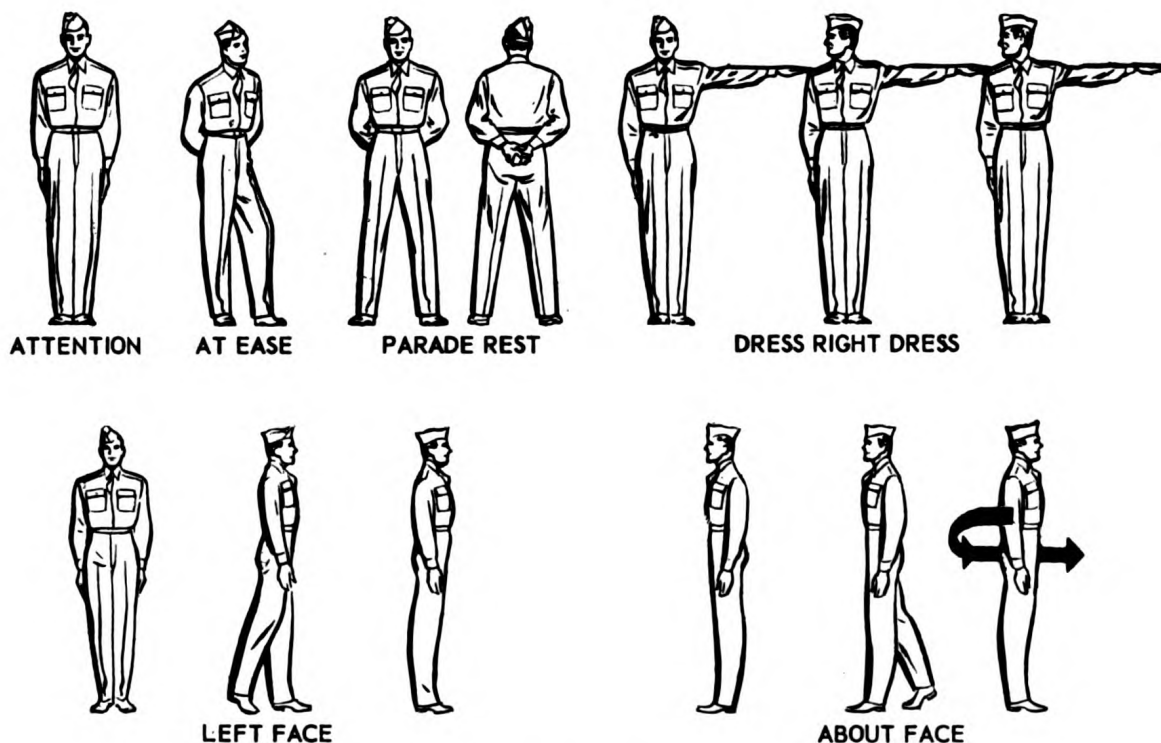


Figure 4-11.--Execution of the facings.

In forming the unit, after "fall in," the command "dress right dress" is usually given. Each man except at the left end of the line extends his left arm, and touches the shoulder of the man next to him. Each man except on the right end turns his head half right and looks down the line.

When the line is straight, and each man at proper interval, the commanding officer orders "ready front," whereupon the men drop their arms to their sides and face the front.

The military command usually has two parts. The preparatory command, spoken loudly and in rising tones, alerts all as to what is coming. The command of execution, given explosively, is for them to do it.

Enough time must be allowed between the two commands so that the movement can be made in unison. Commands while marching must be completed as one foot or the other strikes the ground, so the men can pivot naturally to left or right, as ordered, on the next footfall.

To cancel a preliminary command, the words "As you were" are used.

Command words are not necessarily pronounced as the dictionary says. For impact that registers in the mind for immediate response, the drillmaster may yell, "ten-hut" or "ten-shon" for "attention." "March" may sound like "harch."

The essential elements of good commands are:

Volume: Depends on the size of the unit and the amount of local disturbances. Never skimp on volume.

Duration: Never too long. Short for a squad and longer for larger units. Command of execution always "bitten off."

Pitch: Voice pitched where it can be controlled. Too high or too low pitch are both undesirable.

Enunciation: Commands must be understood. Especially enunciate the preparatory command.

Cadence: Properly space the interval. Give on proper foot.

Inflection: A rising inflection throughout each part of the command with the last syllable of the command of execution at a higher pitch than any other syllable.

Marching, American style, as our other military ways differ from those of Europe, is natural, but purposeful. Our soldiers do not goose-step; do not walk with exaggerated gait or long swing of the arms. But a well-drilled body of American troops looks as if everyone means business.

On the command, "forward, march," all step out as one; left foot first. March is conducted at a steady pace--a step of 30 inches--and steady cadence of 120 steps per minute. That is the rhythm of drill to which most commands are executed. Get that rhythm and the rest comes easy.

On, "double time, march," the cadence is stepped up to 180 steps per minute, and the pace is a little longer. While in normal "quick time," the arms swing easily at the sides, 8 inches to the front and 4 to the rear, the forearms are raised and swung parallel to the ground on double time. "Half step" is at short pace. "Mark time" is to tread in one spot.

The order, "halt" is given as the right foot strikes the ground. Another step is taken with the left, as a man cannot well stop in place without toppling, and the right foot is brought beside it in the position of "attention." This order is preceded by the designation of the unit, as the preliminary command. So is the order "attention." Example: "Detail, halt." "Squadron, attention."

The facings, to turn in place, are simply learned. On "right face," pivot on the right heel and ball of the left foot squarely to the right as one movement; then bring the left foot up to the right in a second movement.

Commands may be executed "by the numbers" for instructional purposes. For example, "by the numbers, right face" is the preliminary command. On "one" the soldier pivots; on "two" he brings up his left foot. Subsequent orders are by the numbers until the order "without the numbers" is given.

"Left face" is, of course, just like "right face" in the opposite direction. "Right oblique, face," and "left oblique, face" are half turns of the body.

On the command, "about face," the right toe is placed about 6 inches behind the left heel, to pivot clockwise on the ball of the right foot and heel of left, and face to the rear. If this is done right, the heels click together on completion of the pivot exactly in the position of attention. It takes a little practice.

Flank movements are somewhat like facings done while marching. "By the right flank, march," is a pivot to the full right. The command of execution is given as the right foot hits the ground. Then as the left foot strikes, pivot on the left toe and the next step with the right foot is in the new direction. "By the left flank," "right oblique," and "left oblique," are similarly executed.

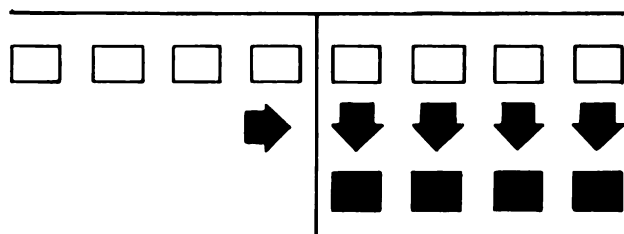
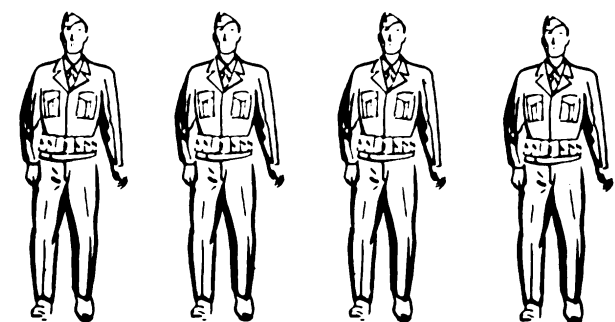
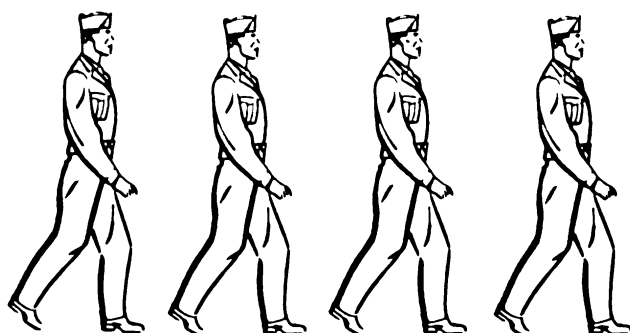
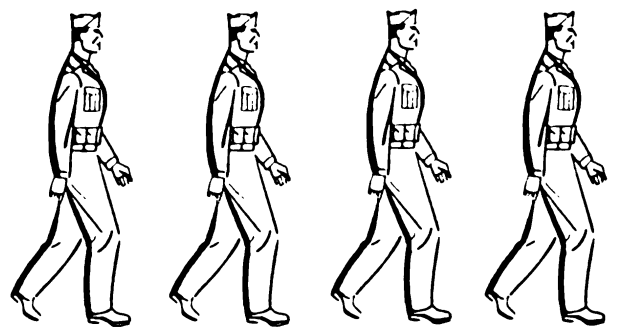
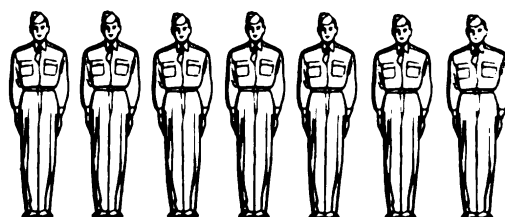


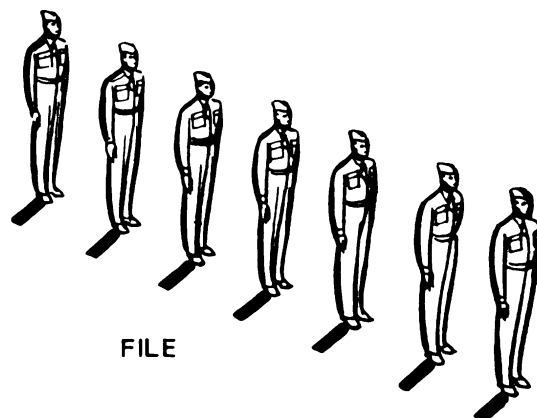
Figure 4-14.--Execution of a right flank movement.

("Oblique," incidentally, is pronounced to rhyme with "bike" rather than with "beak," --one of the words which the drillmaster pronounces not quite as Noah Webster did.)

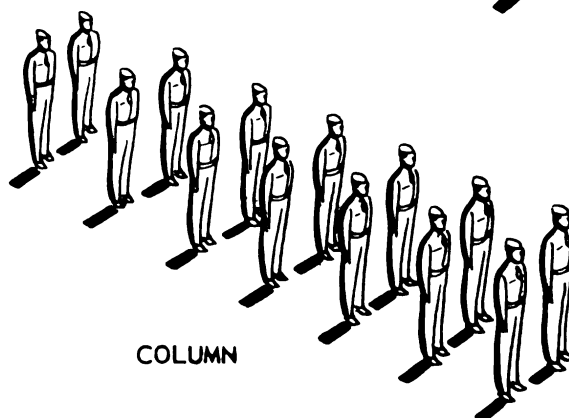
"To the rear," after the command "march" as the right foot strikes, is a clockwise swing, as the left foot strikes, on the balls



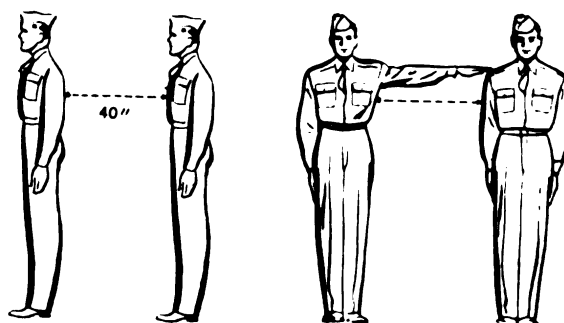
RANK



FILE



COLUMN



DISTANCE

INTERVAL

Figure 4-15.--Rank, file, column and distance.

of both feet, to step off with the right foot in the reverse direction on the next beat.

Right step is by moving the right foot 15 inches to the right, bringing the left foot beside it, and so on in regular cadence. Left step is likewise.

All movements should be done in cadence, which may be chanted, "left, right," "left, right" or "one, two, three, four" by the guide sergeant or drillmaster. Sometimes the unit may chant the numbers in unison or shout the numbers for a specific command. For flanking movements, the drillmaster may shout "swing" when his man should pivot. After the learning stage, the unit should move quietly with its own perfect cadence beating time.

All the foregoing facings and movements can be done by one person alone or by many together. When two or three military men walk down the street together they fall into step by habit, and turn corners smartly.

Now here is how the individuals, having learned the various commands, can take their place in a body of troops, whether a small unit or a large one.

Alinement is the placement of troops in straight lines both front and back, and to the

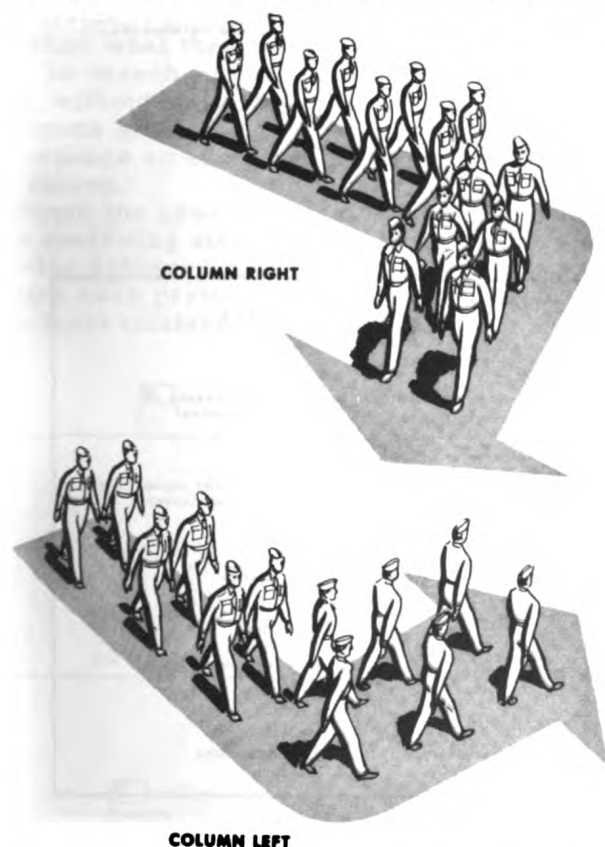


Figure 4-16.--Columns right and left illustrated.



Figure 4-17.--Execution of a left turn in mass formation.

sides. A column is a formation of men one behind the other. A file is a column consisting of only one row of troops. A rank is a line of men side by side.

Each soldier must learn to march in step directly behind the soldier who precedes him. Without looking to the right or left, he must learn to keep in line without getting ahead or behind.

Normal eyesight covers about 180 degrees as may be tested by holding one's arms straight out to the sides and moving the fingers which barely register if one is looking straight ahead. Others in the line, on either side, should appear just at the edge of the limit of vision, when one is looking straight ahead.

A guide, usually a non-commissioned officer, usually marches at the head of the column, to the right, or at the right of a line, as the pace setter.

Column movements are turns where the column goes around a corner. For a single file, on the command "column right," "march," given as the right foot strikes, the man at the head of the file does "by the right flank." The next man comes up to the exact point where the first one swung on his left foot and follows in the new direction. Similarly with "column left." To turn a 45-degree corner rather than a full 90 degrees, the order "column half right" or "column half left" is given. For a smaller angle, the order is, "incline to the right," or "incline to the left," though well-trained troops can simply follow their guide when slight turns are necessary.

For column right or left, when there are several men abreast, the one at the head of the column in direction of the turn will execute his flanking movement and walk at half step while the others on a line with him swing around like a gate and are in line with him in the new direction. Then quick step is resumed. Each line of men in the column comes to the point where the first line turned before they swing.

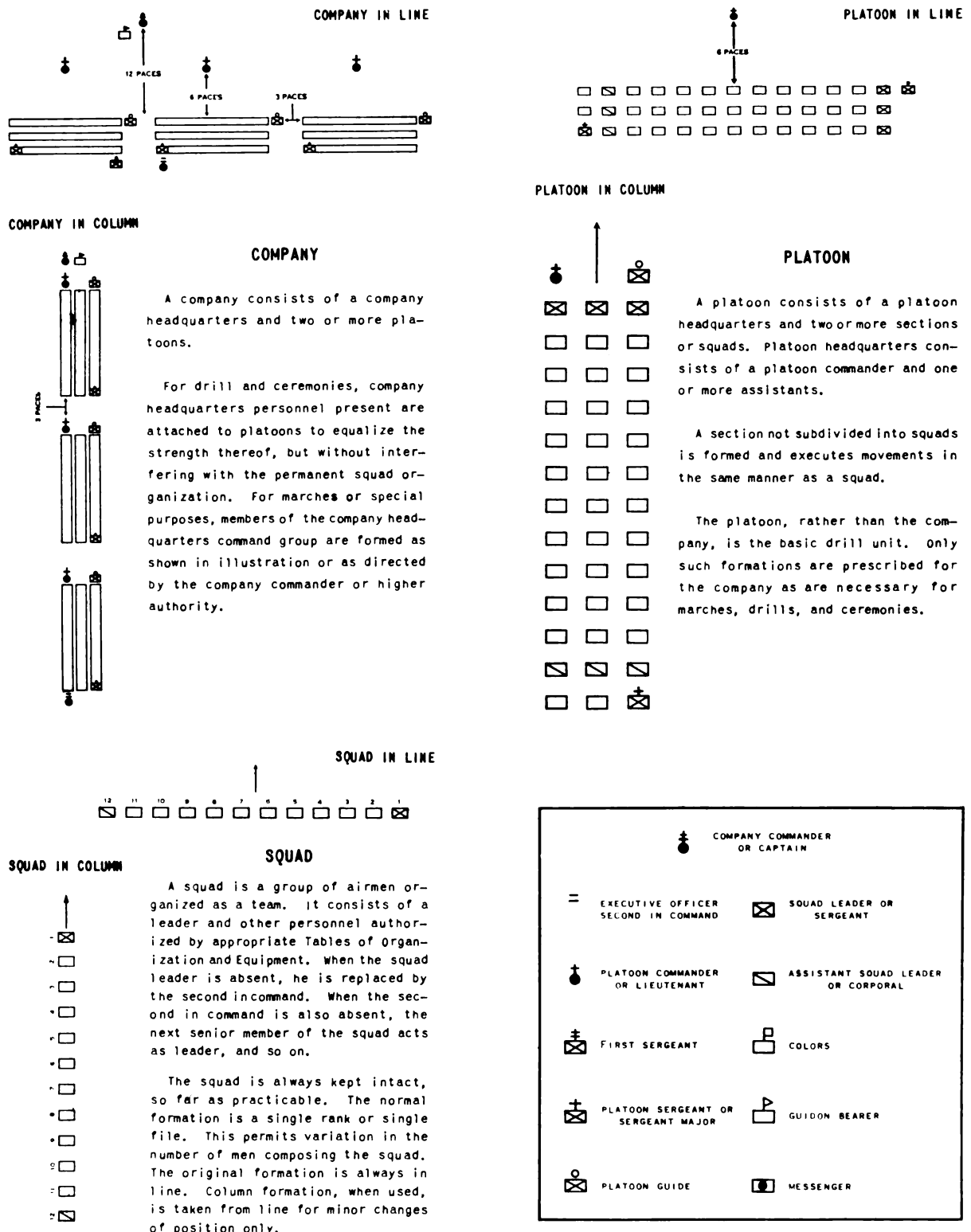


Figure 4-18.--Composition and formation of units for reviews and inspections.

There are many other movements in the drill books and still others "in fancy drill" which may be learned for exhibition purposes. But proficiency in the simple commands outlined above will make it relatively easy to master the rest.

Undue attention to drill at the expense of other subjects will make a showy unit but not a useful one for its real missions. Fine points in the drill manuals are not really worth disputing over. But a military unit that learns the marching rhythm will do its other work better for the teamwork of it. One that puts on a smart exhibition by a well-drilled squad will gain spirit and pride which will truly inspire all members in their less dramatic duties week by week.

REFERENCE

FM 22-5 Leadership, Courtesy, and Drill.
FM 21-100 Soldiers Handbook.
FM 21-5 Military Training.

REVIEWS AND INSPECTIONS

By formal reviews a military unit demonstrates to its commanding officer or to visiting dignitaries. Having long drilled to reach precision, all members have a natural wish to show what they can do. It is a proud feeling to march as one of a group that moves out without faltering, keeps its lines and columns straight, and snaps into each order in cadence so each footfall strikes the ground in unison.

From the newest recruit to the general on the reviewing stand, all share in the pride of having achieved this perfection of movement which each participant strives not to mar by the least mistake.

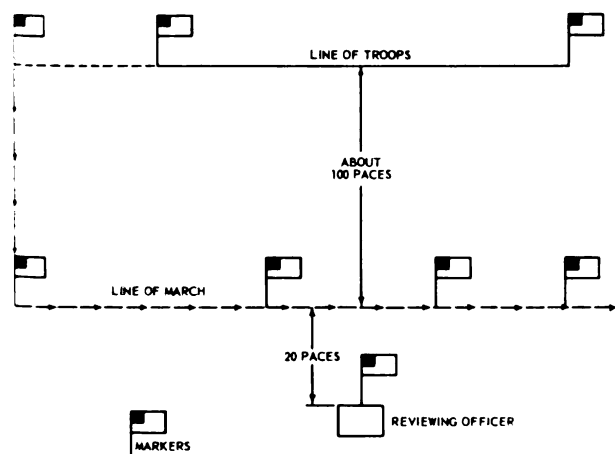


Figure 4-19.--Preparations for review.

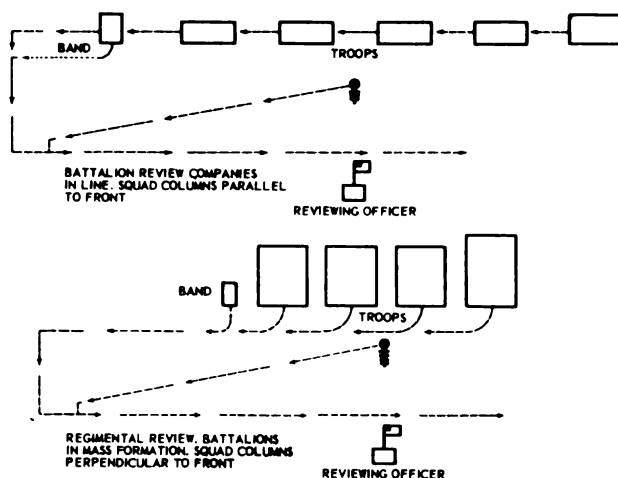


Figure 4-20.--Formations for reviews.

During a review, a formal inspection often is made. The units open ranks while the inspecting officer, with the unit commander, looks at each man from front and back to observe any flaw in uniform, equipment, or bearing.

In preparing for these ceremonies, by shining every buckle and every last square inch of leather, military personnel are reminded that they are always on review as representatives of the Armed Services of the United States, in the eyes of the public. Slovenly ways do not go with the uniform of this nation.

Officers of smaller units--squadrons and companies--may have frequent inspections to keep the men prepared for the larger ones. Pride in appearance is fostered by continual notice; it may wane if no one seems to care.

A full review is in 4 parts: (1) Forming the troops; (2) presenting them to the reviewing officer; (3) inspecting them; and (4) parading them.

When the troops are massed, facing the reviewing stand, they are called to attention and present arms, or give the hand salute if unarmed. Then the reviewing officer walks to inspect them.

Exercise: For most CAP units, reviews will be held only during infrequent wing or group mobilizations, but should be practiced by smaller units to the extent of marching over a route such as a procession of units would take.

The dramatic part comes with the order, "pass in review." Units march as indicated in the diagram. As each unit nears the reviewing stand, its commander orders, "eyes right." All but the man at the right end of each line turns his head toward the stand until the order "ready front" is given. The unit

commander salutes and the reviewing officer acknowledges.

On large military posts, reviews at retreat, or the presentation of colors, are very elaborate ceremonies. Music is played and salutes fired.

REFERENCE

FM 22-5 Leadership, Courtesy and Drill
FM 1-60 Reviews and Inspections

INTERIOR GUARD

To protect a military unit in war against attack, to maintain order and prevent looting in civilian emergencies such as flood, or for routine guarding of government property, prudence demands the formal posting of guards who know their rules.

"Interior guard" does not mean "indoors." It is the system for protecting any camp or post. For 24-hour duty, guards are posted in 3 sections called "reliefs." Each will serve 2 hours at a time until all have been on duty for a total of 8 hours apiece. While one relief walks post, the other 2 are sleeping or resting, always fully clad and on instant call.

In addition to the 3 main reliefs, there is a reserve so that no part of the post will be unprotected if the guards on duty have to concentrate their forces to meet some trouble.

Each sentinel in the respective reliefs has a special part of the camp to patrol--his post, which is given a number. He must keep walking to and fro along the boundaries of his post, as sentinels on adjacent posts do the same, leaving no gap through which unauthorized persons may pass without challenge.

The officer of the day is in charge of the camp. The sergeant of the guard is in charge of the guard. Each of the 3 reliefs is under a corporal. If a sentinel needs to call for aid or instructions, he shouts, naming his post. For example, "corporal of the guard, no. 3." If much help is needed, he calls, "the guard, no. 3." If a fire, "fire, no. 3." In extreme emergency, he fires his rifle in the air 3 times before calling.

Sentinels closer to the guard tent or guard house than the one who calls will relay the message, shouting it in the same words.

If a sentinel sees anyone, he halts, comes to the "port arms" position, holding his rifle diagonally across his chest, and challenges, "Halt! Who goes there?" The challenge is at about 30 paces.

If he challenges 3 times without answer, he may fire. The person challenged must iden-

GENERAL ORDERS

1. To take charge of this post and all Government property in view.
2. To walk my post in a military manner, keeping always on the alert and observing everything that takes place within sight or hearing.
3. To report all violations of orders I am instructed to enforce.
4. To repeat all calls from posts more distant from the guardhouse than my own.
5. To quit my post only when properly relieved.
6. To receive, obey, and pass on to the sentinel who relieves me all orders from the commanding officer, officer of the day, and officers and non-commissioned officers of the guard only.
7. To talk to no one except in line of duty.
8. To give the alarm in case of fire or disorder.
9. To call the corporal of the guard in any case not covered by instructions.
10. To salute all officers and all colors and standards not cased.
11. To be especially watchful at night, and during the time for challenging to challenge all persons on or near my post and to allow no one to pass without proper authority.



tify himself as "friend," "officer of the day," etc. The sentinel replies, "Advance, friend, and be recognized." Or, "Advance, officer of the day," etc.

At a closer distance, not so close that the person could overpower the guard, the sentinel halts him again to be sure of correct identification before letting him pass.

A guard is always under arms and is inspected to be sure that all weapons are in proper condition, and that the appearance of each man is creditable. The forming of a new guard is called guard mount. Formal guard mount is an elaborate ceremony, accompanied by band music. Informal guard mount is simpler and without music.

The main thing to remember is the general orders, 11 in number, which apply to all

guard duty. Special orders are issued to cover each situation. The guards repeat their special orders to each other on formal relief.

When military police units are established it is not necessary to draw personnel from individual units for guard duty. Military police are trained in the enforcement of both military and civil law and for such specific duties as the protection of property and the maintenance of good order and military discipline.

REFERENCE

FM 19-5 "Military Police"

Unit V

FUNCTIONS OF CIVIL AIR PATROL

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UNIT V

FUNCTIONS OF CIVIL AIR PATROL

ORGANIZATION

In simple terms an organization is the structure of a unit. It establishes the relationship between the individuals and groups of individuals engaged in a common effort. It is the combined effort of two or more people to achieve a desired result. When it was first learned that two men were capable of moving an object which could not be moved by one alone, it was recognized that it was necessary for one of the two to be the leader. As the organization became more bulky, it was found that one man could not successfully carry out the two functions of assuming responsibility and giving directions without some help. This brought into being a staff, or advisors to the leader.

STAFF ORGANIZATION

Types of Military Organizations

1. Single Officer Type. Let us examine some of the organizations in existence. We find first the type in which one man controls the entire organization. All other members of the organization are workers and are responsible to this individual. If you will visualize such an organization you can see that it has all three fundamentals. We can call this type of organization the Single Officer Type. We find it used in small units and small businesses. One of its limitations is the simplicity of command, one man having to direct and control all others. As the size of the organization increases, the problem of control multiplies until it becomes impossible for one to directly control all other individu-

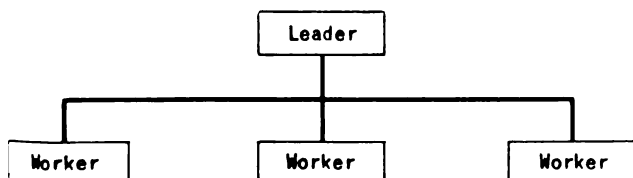


Figure 5-1.--Officer Type Organization.

als of the organization. Then it becomes necessary to appoint subordinate supervisors, and we have what is known as the Line Type Organization.

2. Line Type. In this form of organization a clearly defined chain of command is established from the top man to the individual worker. Under this system we find unity of command. The authority of command has been decentralized and the factor of simplicity of command has been adhered to, providing we do not have a larger number reporting to one man than he can control. Many sections within our larger units use this type of setup. In industry we find such an organization with a general manager at the top and under him the sales manager, shop superintendent, and accountant. The disadvantage of such an organization is that, as it expands, the leader finds himself loaded down with details and without sufficient time to carry out his primary function of supervision or command. He thus finds himself calling on certain individuals for help, and we come to the most common type of organization; namely, the Line-Staff Type.

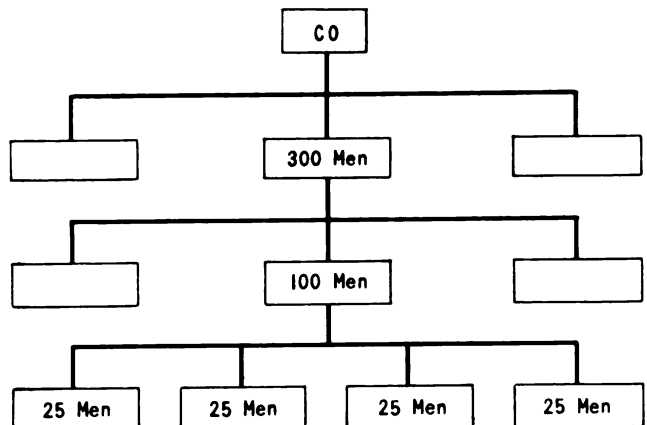


Figure 5-2.--Line Type Organization.

3. Line-Staff Type. Under this system, the commander's staff can advise him on important matters and still not interfere with the

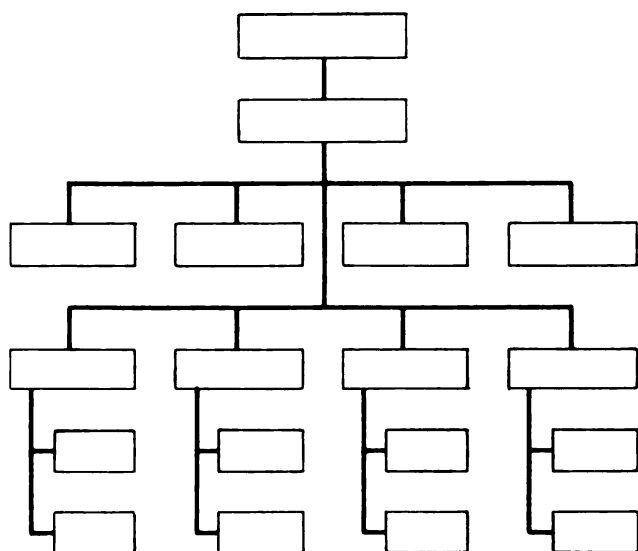


Figure 5-3.--Line-Staff Organization.

established line of command. Such a type of organization is found in most large industries. It has all of our fundamentals of organization, providing we do not exceed the number reporting who can be effectively controlled.

Basic Elements of Staff Organization

In the line-staff type organization, it is possible to have three different types of staff groupings; namely, the personal staff, specialist staff, and the coordinating staff. Every staff organization contains at least one of these groupings and may contain all three. Let us consider each grouping individually.

1. Personal Staff Group. The first in the chronological order of development was the personal staff group. This group developed almost with the beginning of man's ability to wage war. The early tribal chieftains found the need for advice in conducting their fights for survival. They gathered together some of their trusted followers and organized what we know today as a war council. The members of this council assisted the chief in making plans and served as his personal advisors. From this early start we got our present personal staff group. Today this group forms a part of the office of the commander. In some cases it may be relatively unimportant, consisting only of the commander's aide and secretary. In other instances it has taken on much greater significance. Certain special functions over which the commander wishes to exercise close personal supervision are brought up to this personal staff level where they are directly under the

commander. Common examples would be budget and fiscal, statistical control and legal officers. There is no limit to the number of officers composing this group but for best operation it should not exceed the limits of simplicity of command.

2. Specialist Staff Group. As the complexities of war increased and new tactics and weapons were developed, the commander found himself in need of advice of a special nature. The personal staff group was not enough, as he needed the advice of officers that were specially trained in certain phases of warfare. Thus was created another staff group made up of specialists. Today we know this group as the special staff. Each member of this group specializes in one or more of the functions included in the mission of the commander and furnishes to the commander information and advice dealing with his specialty. In this group we find many technical specialists, such as ordnance, medical, finance, and chemical officers. The information that they supply the commander must be coordinated by him into workable information. As long as the commander did not have too many subordinate commanders nor too many specialists on his staff he could accomplish this coordination.

3. Coordinating Staff Group. As scientific developments continued, the number of specialists was further increased and new types of units were added. Needs for supplies and personnel increased in such proportion that the commander was not able to coordinate all the activities of his command. It became necessary to add a third staff group to perform this task of coordination. As these officers were to coordinate the activities of the specialist staff group, they were called the coordinating staff group.

Sometimes we refer to them as the General Staff Group because of the nature of their responsibility. In forming the coordinating staff, the commander's job is divided into broad, general groups of related functions, with a section of the coordinating staff setup to handle each such group of functions. They coordinate the activities of the specialist staff group, the efforts of the operating units, and the work of the specialist staff group with that of the operating units. In addition, they assist the commander in making plans and supervise the carrying out of these plans. Officers of this group are not in the chain of command, except for their own staff sections, but they may be delegated authority to operate in the commander's name. Nearly all civilian organizations operate under these three staff groupings.

Staff Group Functions

We have considered the three basic staff groups, how they came into being and what each does. All types of military staffs in use today consist of a commander plus one or more of these three basic staff groups, which, as you remember, are:

1. The Personal Staff Group which works closely with the commander and advises him on those matters of personal or particular importance.
2. The Specialist Staff Group which consists of those specialized or technical representatives who are concerned primarily with their own specialty.
3. The Coordinating Staff Group which assists the commander in coordinating the efforts of the Specialist Staff Group and subordinate commanders.

Basic Types of Staff Organization

Keeping these staff groups in mind, let us see some of the ways they are combined to form different types of staff organizations.

1. Departmental Staff Organization consists primarily of a special staff group. It might, or might not, have a personal staff, but it never has a coordinating staff. The principal duties of the organization are divided along specialty lines into departments. Each department has at its head a chief who furnishes the commander with the information, advice, and supervisory service with respect to his own specialized department. In the departmental type of staff, the specialist staff group is used as the main staff level and the commander has no coordinating staff. Hence, he, with his personal staff and his chief of staff or executive, is the sole coordinating agency. The capability of one man to control a number of men is of vital importance in the departmental staff organization. An example of this type of organization can be found in the squadrons of a service group. Many small civilian concerns use such an organization. They might have a sales department, advertising department, and a production department.

2. General Staff Organization is a streamlined organization particularly adapted for use in the field. It is usually the staff organization of the higher headquarters. All three of the staff groups are found in the general staff organization. The personal staff group is shown at the commander's level, reporting directly to him.

The identifying feature of this type of staff, as its name indicates, is the use of the term,

"general staff," to identify the coordinating staff group. This general staff is divided into at least four primary sections to agree with the principal command functions: namely, personnel, intelligence, operations and training, and logistics; and are called A-1, A-2, A-3, and A-4. Their job is to coordinate all activities of the command.

The specialist staff group in this type of staff is termed the "special staff" and includes both administrative and technical services. They have a direct responsibility to the commander but their activities are coordinated by the coordinating staff group. This type of staff will be taken up in detail later.

3. Directorate or Deputy Staff Organization. This organization will differ from the general staff type in that the coordinating staff members become directors of their particular functions and, as such, have more supervisory functions over their activities. They may become deputies and be given a command function in addition to their normal staff duties. Usually the number of members on the coordinating staff are less than under the general staff setup. The intelligence officer becomes a member of either the personnel section or the operations section in the directorate type organization. Under this system the personal staff is retained, but the special staff is placed under the direct supervision of the directors or deputies. As far as the simplicity of command is concerned, we find a decided improvement under such a system.

4. Committees, Boards and Commissions. To complete the descriptions of military staff organizations, we must mention such types as committees, boards, and commissions which are appointed by commanders for special situations not covered in their regular organization. They have no specific or directed organization and will vary according to their job. However, they assist the commander and must be considered as forms of staffs. They may be either permanent or temporary, depending on the purpose for which they are formed. Some examples are: Reclassification Boards, Air Priorities Boards, etc.

5. Joint and Allied Staffs. A joint staff is one including elements from the United States military, air, and naval forces. An Allied or Combined Staff is one including elements from the armed forces of two or more allied nations.

STAFF ORGANIZATION AND FUNCTION

Staff Organization and Their Functions. These are so closely tied together that we

must consider each in the light of the other. The way a staff is organized will depend largely upon the functions it is to perform. If the functions are numerous, we can expect the number of staff members to be numerous, and vice versa.

We should find a standard type of staff procedure, but usually, even though two staffs are organized under the same Table of Organization they operate differently. Why?

The answer lies in the very definition of a staff. "A staff is a group of officers who assist the commander in his exercise of command." As every commander is an individual, he needs help in a different manner; thus, he uses his staff as he sees fit. The dictionary states that a staff is something to lean upon. So, how the commander leans upon it

is his business. Therefore, we can look for staffs to operate in different manners. Should the commander have the prerogative to organize and permit his staff to function as he sees fit? Yes, he is responsible for the functions of his command, so he should employ his staff to accomplish these responsibilities.

Overall Functions of the Staff

Regardless of how the commander employs his staff there are certain overall functions to be performed by all staff members. To begin with, a staff officer never commands as a staff officer. He is there to advise, counsel and supervise activities delegated to him by the commander. Any command functions he performs are in addition to his staff

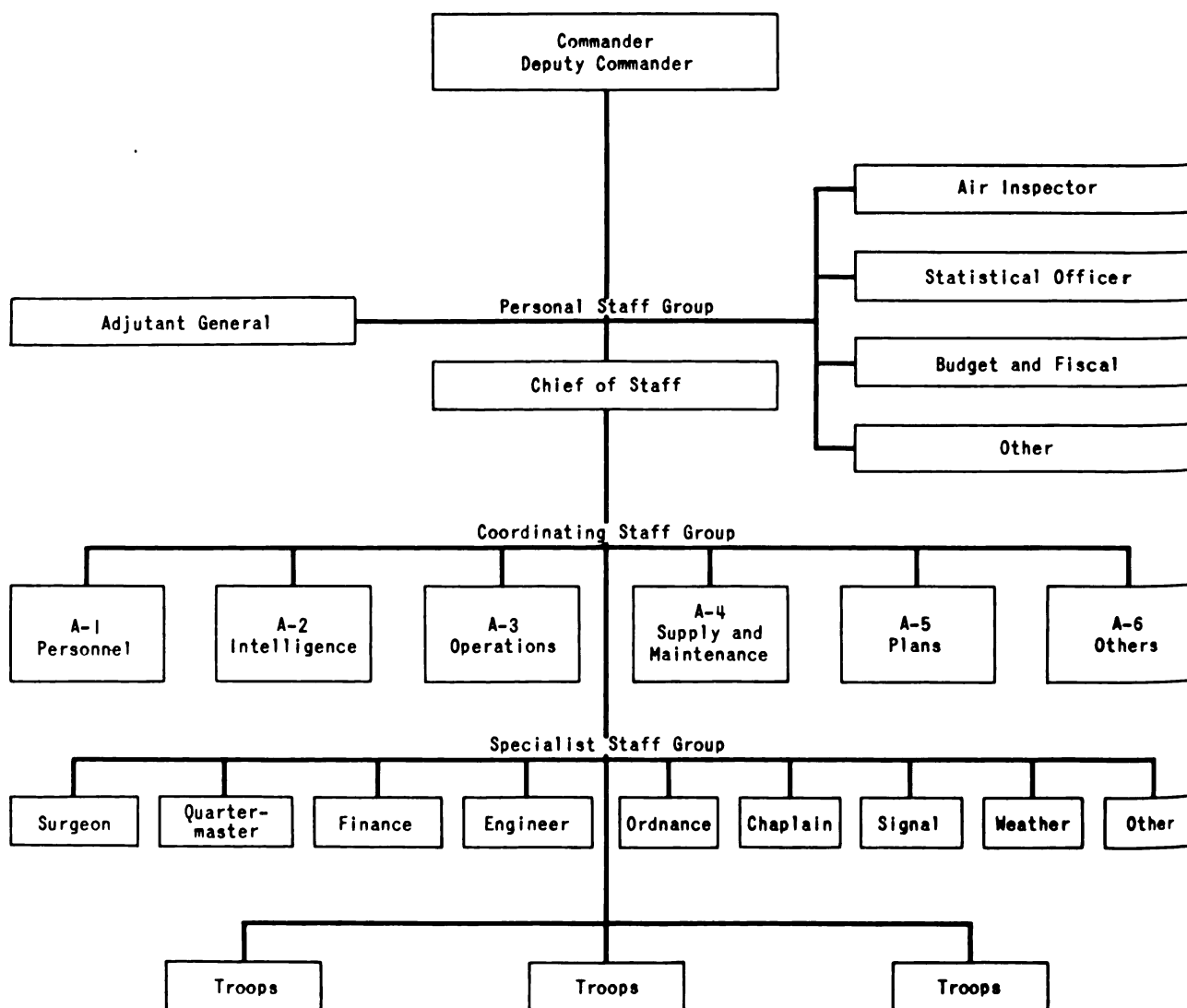


Figure 5-4.--General Staff Organization.

duties. The staff is given the following over-all functions:

1. To make plans.
2. Provide the necessary personnel and material with which to carry out these plans.
3. Issue instructions and orders (in the name of the commander) necessary to carry out these plans.
4. Train the units to effect the plans.
5. Supervise the execution of the plans.
6. Assist the commander's personal efforts to accomplish the mission.

In the Air Force there are many commands which have a variety of missions. Each mission may be broken down into clearly defined functions. Two types of staff organization are found in CAP:

1. The general staff.
2. The directorate staff.

Let us look at each type of staff and see how it operates.

General Staff Organization

The general staff type organization may be considered as the basic or conventional type of staff organization. It is the type of staff organization used by tactical commanders in the field. We sometimes refer to it as the "A" type of organization because the coordinating staff sections are designated by A-1, A-2, etc. It is the older of the two staff organizations and was adopted by the Air Forces from the Army.

The three staff groupings at the present are the personal staff, the specialist staff and the coordinating staff. Each is distinct and its members function separately. The number on the staff will vary and is entirely up to the commander. Notice the use of a deputy commander in the accompanying chart. This office originated with the Air Force and is highly essential. The requirement that units be flexible and mobile also necessitates the commander to move at times with his air echelon. In his absence the deputy commander directs the organization, and there is continuity of command. This does away with the necessity of cutting an order appointing an acting commander as is done in most ground force units.

The coordinating staff group, which is called the general staff in this type of organization, consists of four or more sections, depending upon the major functional divisions of the command. In lower echelons the letter "S" is used and stands for the word, "staff." Under this system the four main functions are called A-1, A-2, A-3, and A-4 and stand for the sections of Personnel, Intelligence, Op-

erations and Training, and Supply, respectively. If there are any additional sections, they are organized by the commander. In Air Force, A-5 heads the Planning Section and A-6, Communications. This general staff coordinates the work of the special staff and assists the commander in exercising command by supervising and coordinating the function of the respective sections throughout the command.

The special staff group consists of sections that supervise and operate those specialized or technical functions included in the mission of the commander. You will notice a distinct division between the line or command functions and that of the staff. However, there exists a close relationship between the sections of the General and Special Staffs.

Each section of the special staff is concerned with all the functions relating to a particular arm or service. Each section of the general staff is concerned with a particular function as pertains to all arms or services and activities in the command. In functional procedure, then, each general staff section may deal with all special staff sections, and each special staff section may deal with all general staff sections.

You will notice that the commander has an assistant called the chief of staff. In smaller units he is known as the executive officer. His main duty is to supervise the routine functioning and operation of the staff. He is the medium through which the commander controls his staff and the units of the command. Under the general staff type of organization, the troops are directly under control of the commander or his subordinate commanders.

Directorate Staff Organization

There are three directors on the coordinating staff: the director for administration, the director for operations and training, and the director for supply and maintenance. This system lends itself to a three-function breakdown rather than the four found in the general staff organization. As directors, these coordinating staff members supervise the specialist staff as well as performing their normal coordinating duties. You will notice in the accompanying chart that the specialist staff has been placed under the direct control of the coordinating staff. It shows that the command channel from the commander to the special staff members goes through the directors concerned. This gives the directors a certain command function, but does not change our concept of a staff officer. Their

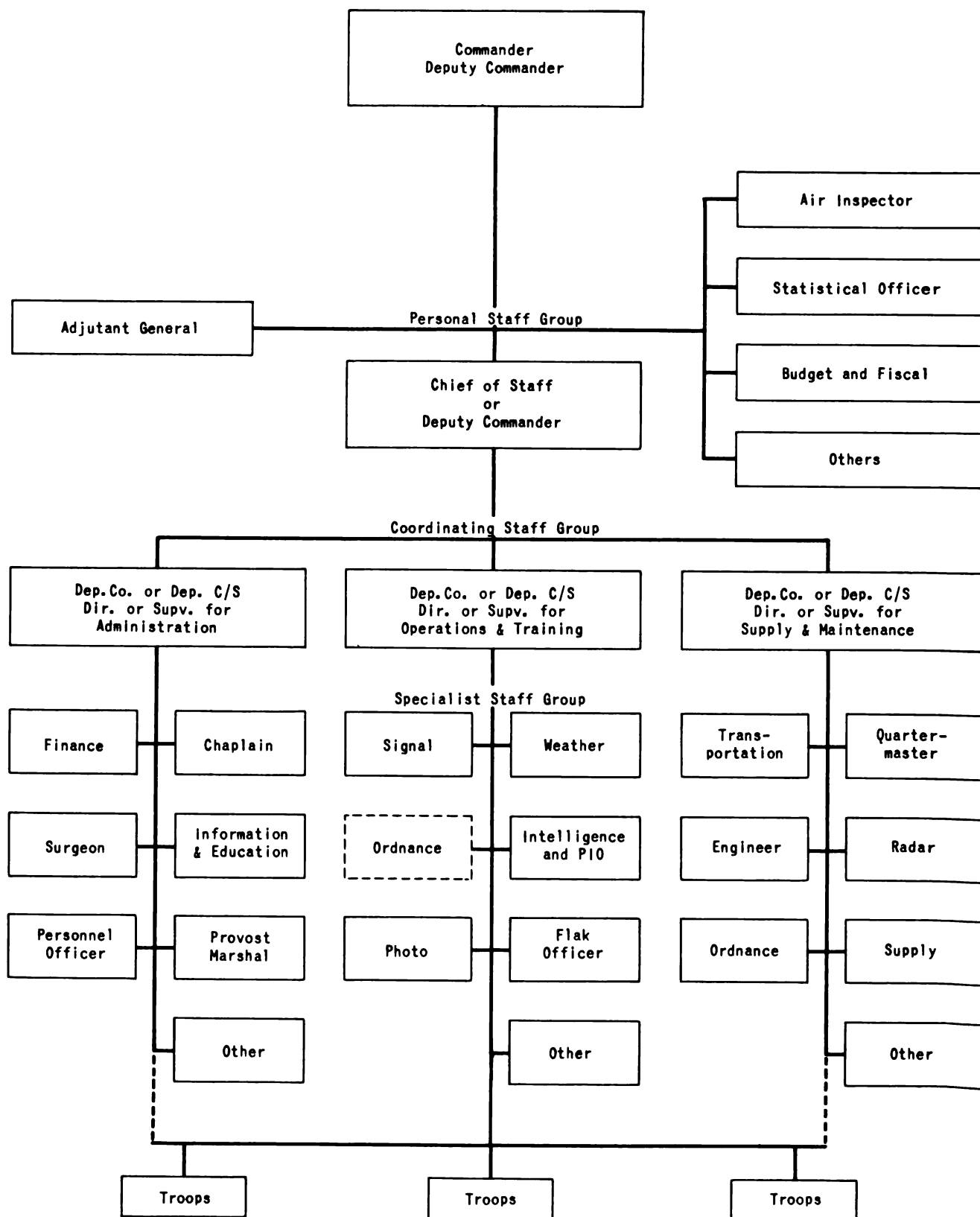


Figure 5-5.--Directorate or Deputy Staff Organization.

command function is delegated by the commander and is an additional duty and not a staff function. They still coordinate the functions of the command. They still advise the commander on plans pertaining to their function and must still get an approval from the commander. You will notice that the directors are sometimes given the titles of supervisors or deputies. The difference in the terminology is supposed to show the degree of authority they have been given by the commander. However, in practice this is not so, and the amount of power depends on the commander concerned.

At times, we find that several of the so-called specialists have to work with more than one director. The ordnance and communication officers are examples. The nature of their specialties makes it imperative

that they work directly with the director of operations and the director of supply and maintenance. At first glance it seems that this situation breaks down the chain of command. However, this is not the case, as they are assigned for control to only one director.

Under this type of organization, we still have the commander, deputy commander, and chief of staff performing the same functions as in the general staff organization. The commander still has his personal staff. This indicates a trend toward decentralization.

Difference Between "General" and "Directorate" Staff Organizations

These two staff organizations differ in three points; namely, terminology, control of special staff, and functional breakdown.

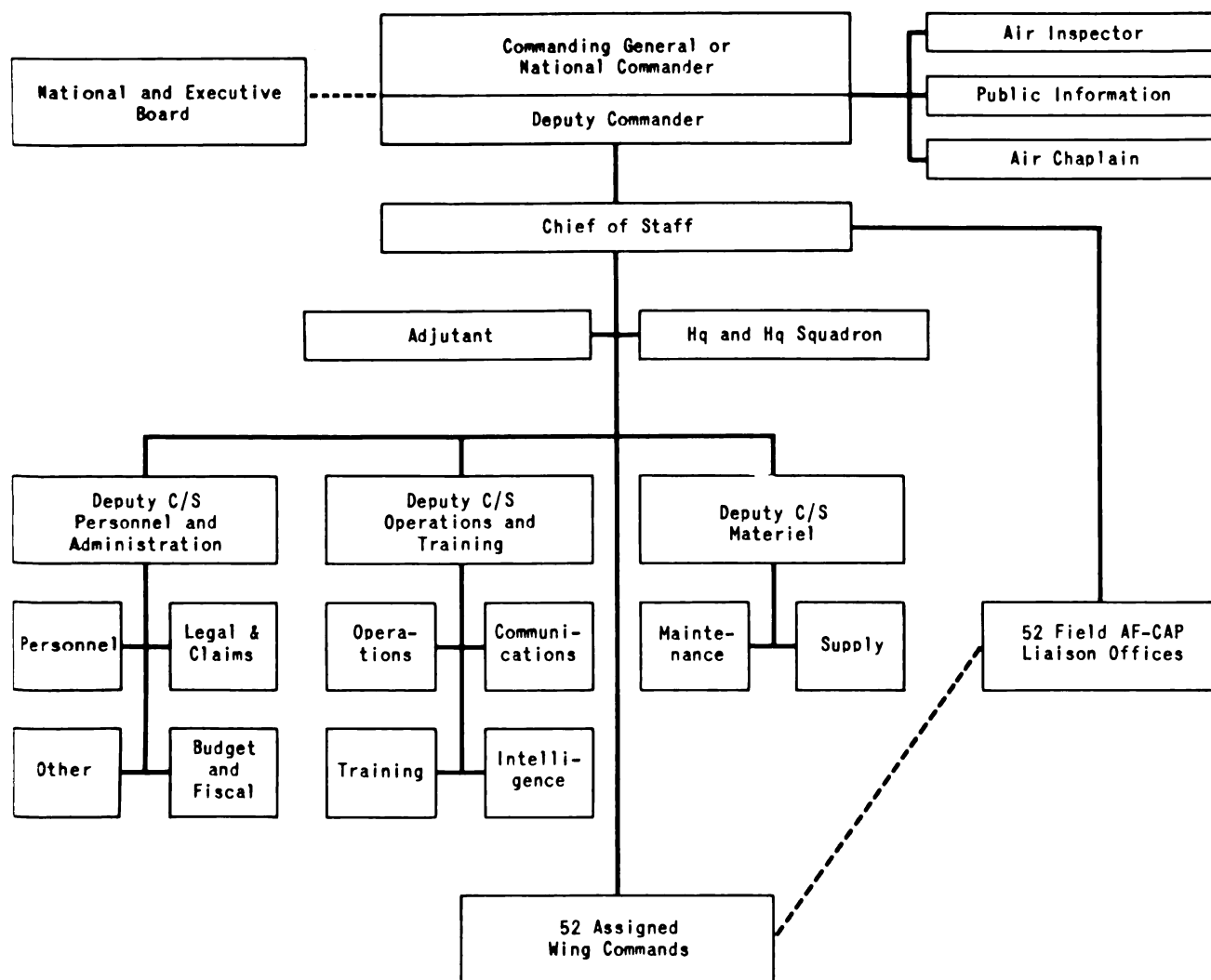


Figure 5-6.--Organization of National Headquarters, CAP.

1. Terminology. The different titles given to the coordinating staff members do not change the functions of these sections. Their functions remain the same on both staffs. These sections, without regard to the titles or words used to describe them, are but the breakdown of the major responsibilities of the command's overall functions. The difference between the two types of staffs is in the exercise of directory or supervisory control over the functions of the command. The functionalized aspect of the various sections remains the same.

2. Control of Special Staff. Under the directorate system, the special staff is directly supervised by members of the coordinating staff group and the independence of the specialist is lost. However, in practice the general staff system may still place the special staff under the supervision of the coordinating staff group.

3. Functional Breakdown. The third difference in these two groups is in the breakdown of the command's functions. Normally, in the general staff system there is at least a four-way breakdown into personnel, intelligence, operations, and supply. Under the directorate system, there is usually a three-way breakdown with the intelligence officer being placed under the supervision of one of the directors. If the situation is tactical then we find intelligence placed under the operations section. If non-tactical, it is sometimes placed under the director for personnel and administration. It is entirely up to the commander as to how this section will be handled.

In the Civil Air Patrol, the National Headquarters uses the Directorate system, while at the wing and lower levels, both Directorate and General Staff systems are used.

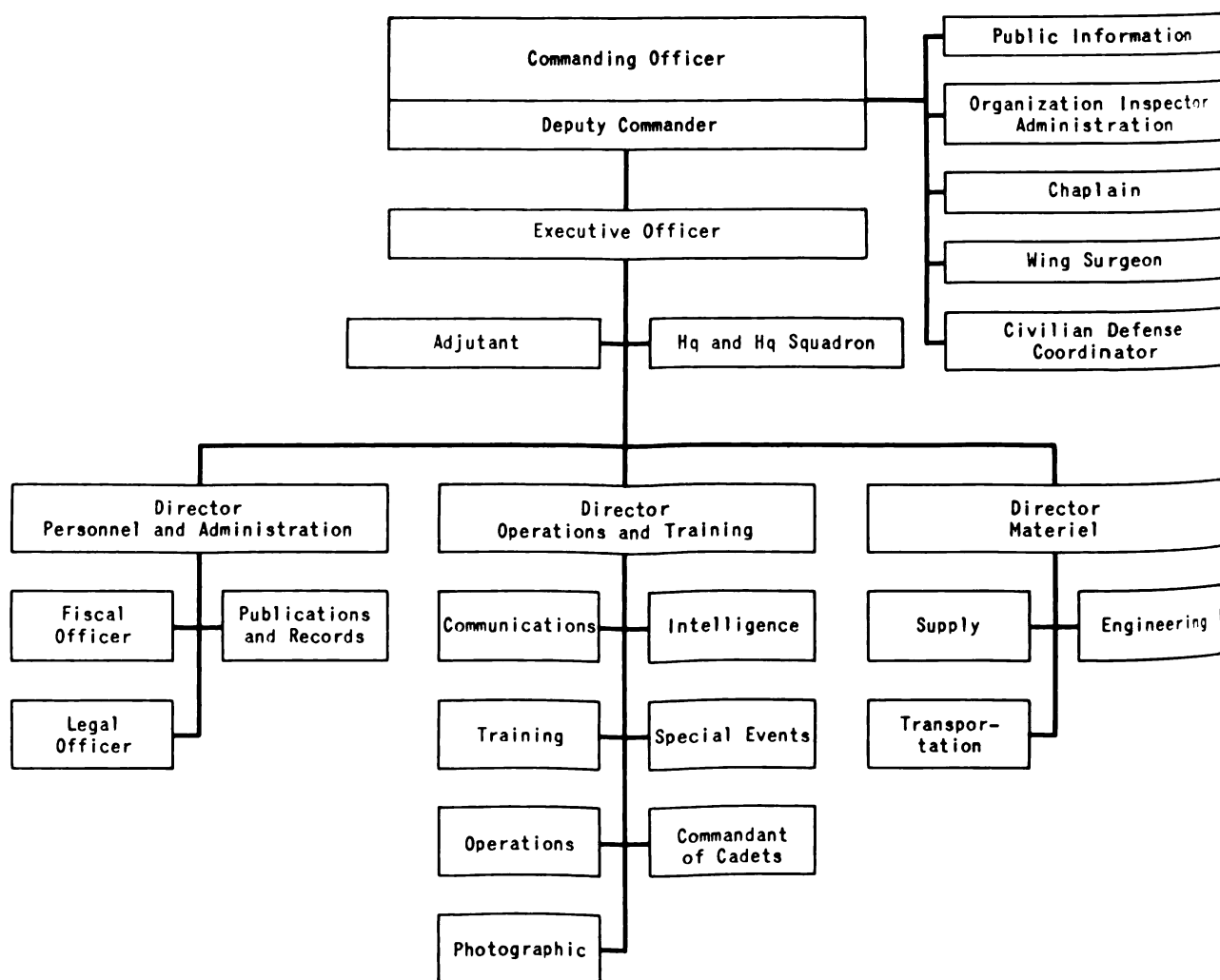


Figure 5-7.--A Typical Wing Organization, Directorate Type.

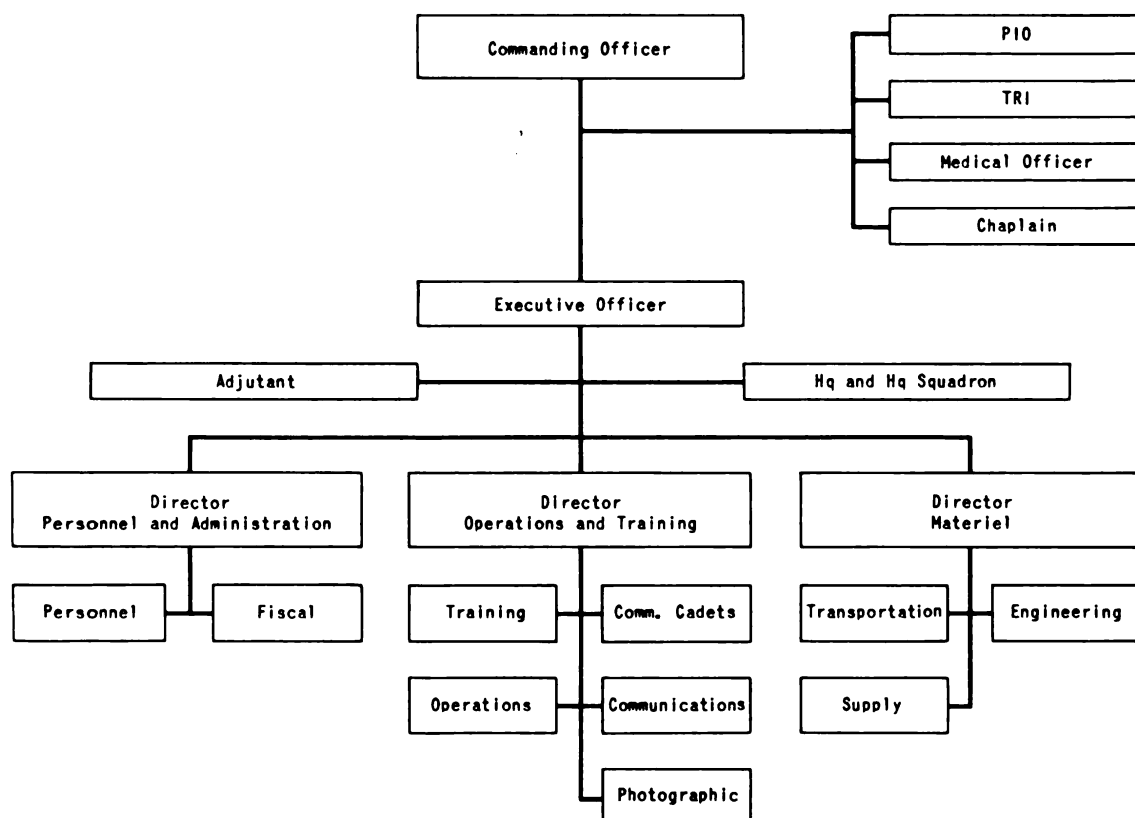


Figure 5-8.--A Typical Group Organization, Directorate Type.

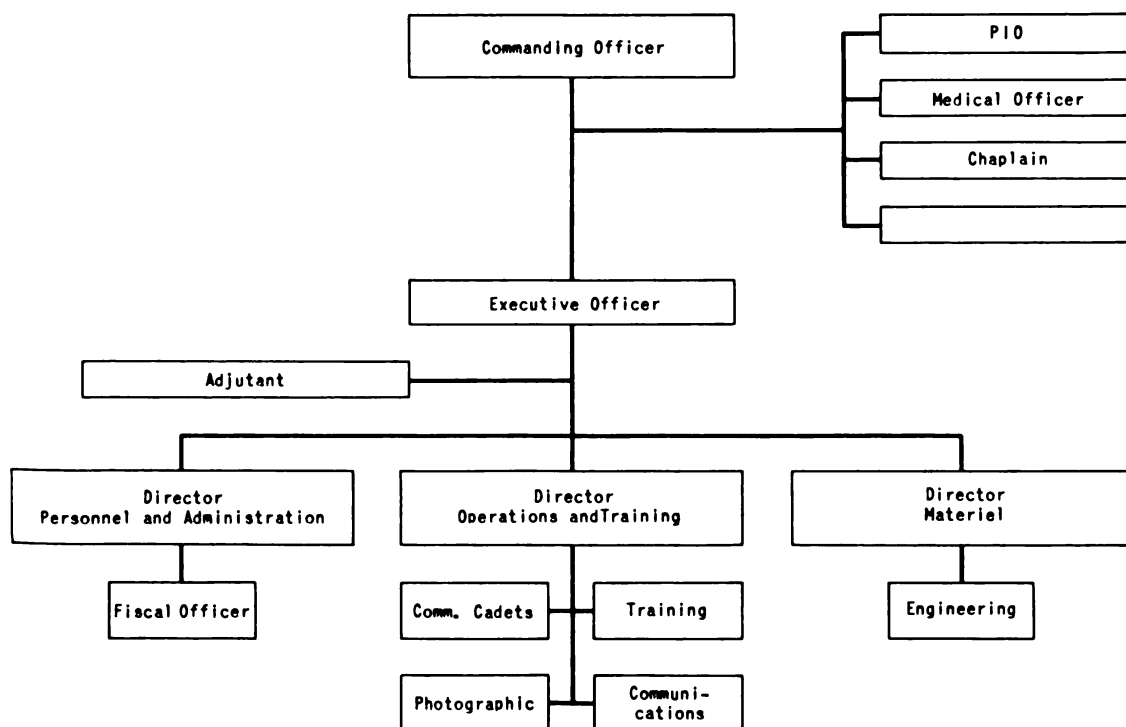


Figure 5-9.--A Typical Squadron Organization, Directorate Type.

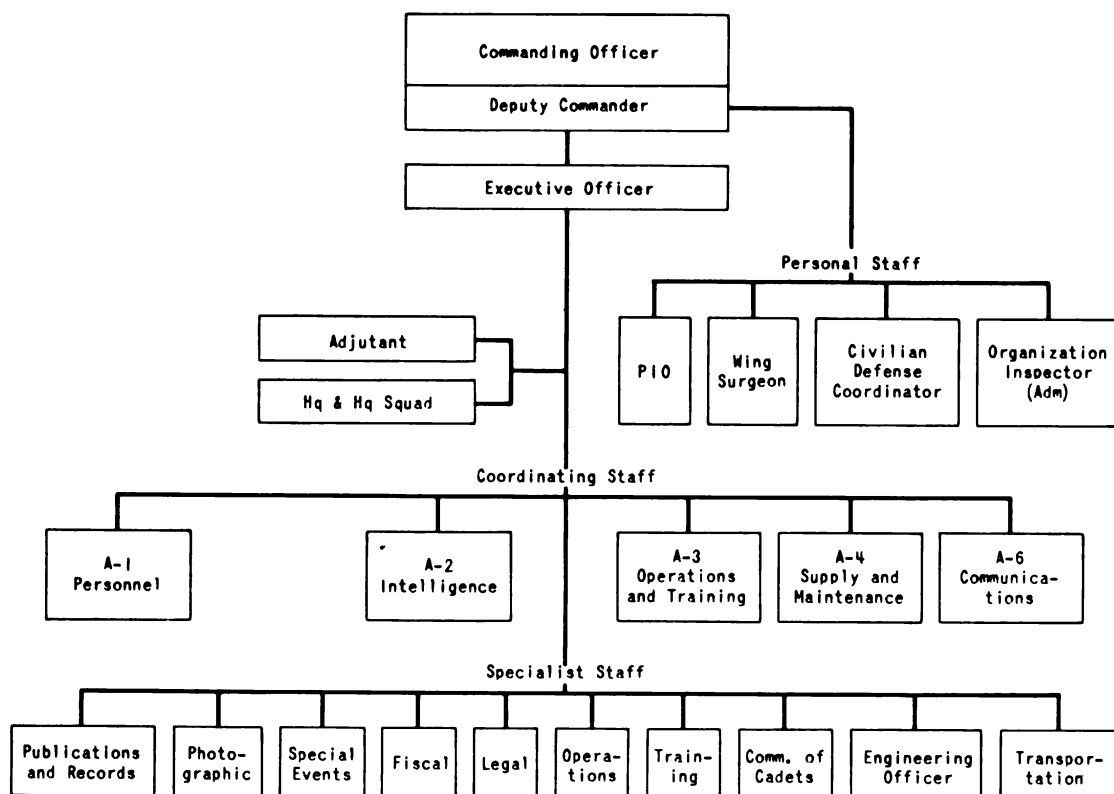


Figure 5-10.--A Typical Wing Organization, General Staff Type.

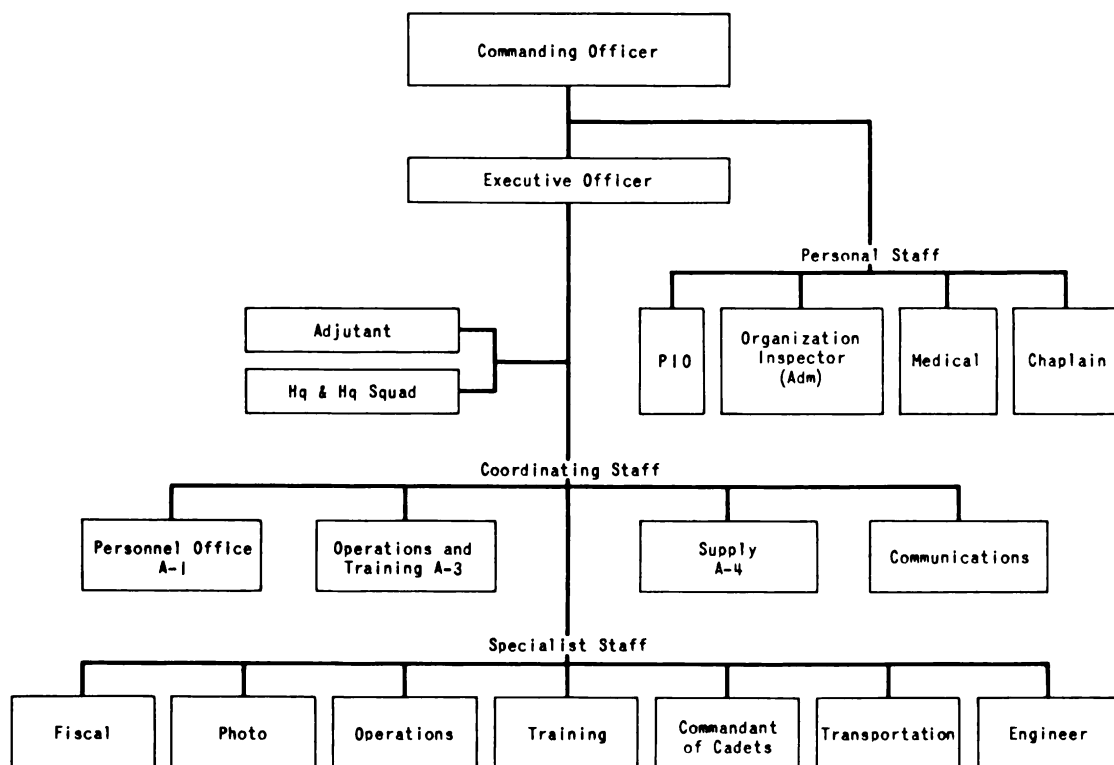


Figure 5-11.--A Typical Group Organization, General Staff Type.

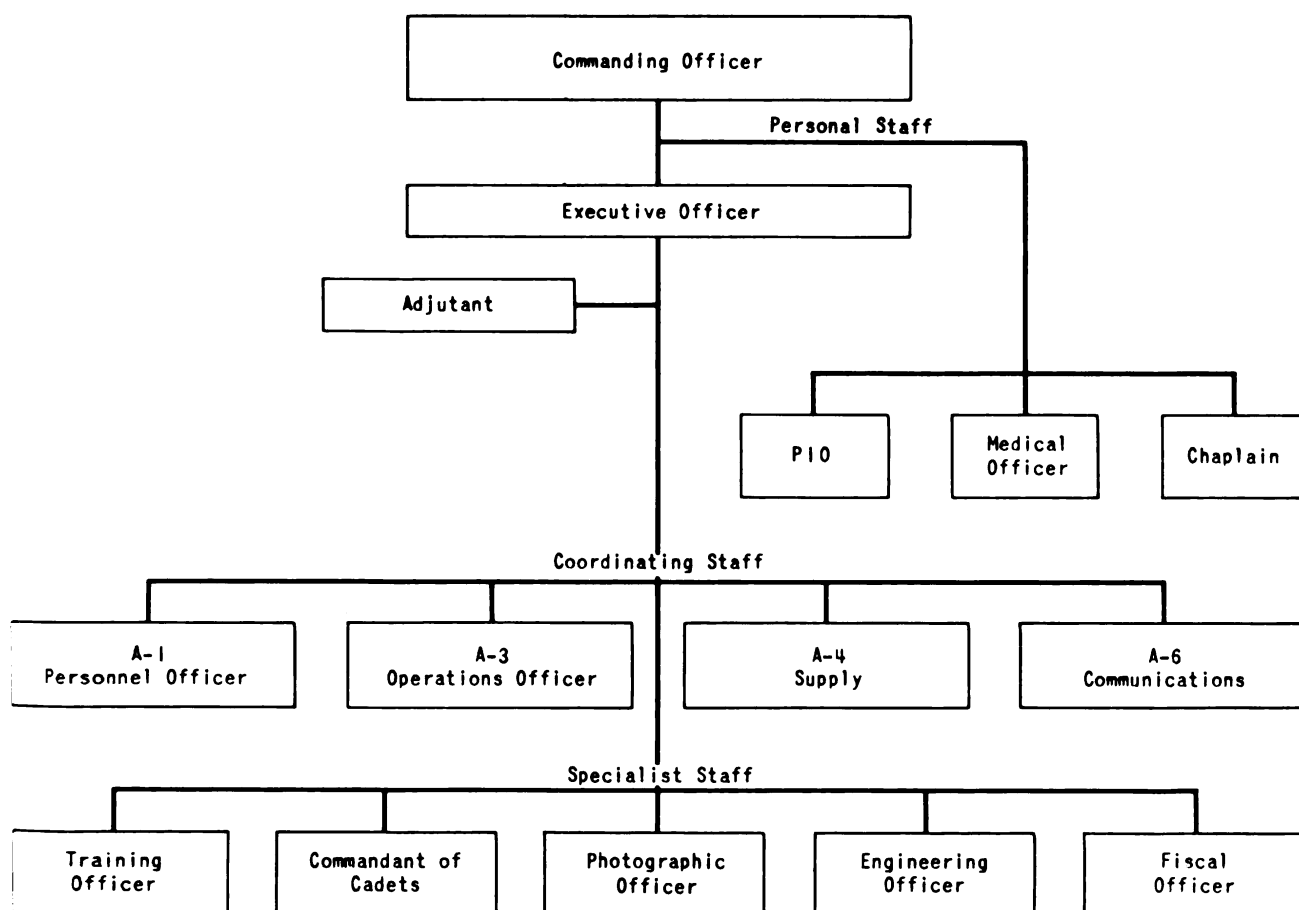


Figure 5-12.--A Typical Squadron Organization, General Staff Type.

REFERENCES

AF Manual 35-0-1 Classification Manual

FM 101-10 Staff Officer's Manual
CAP Reg. 20-Series Organization
TM 12-230A Duties of Squadron Officers.

A-1--ADMINISTRATION

Sound administrative practices are essential to every organization. Good management is generally the final product of effective administrative practices. In most respects, administration is the application of the fundamental principles and functions of management.

Sound administrative details and practices are essential to the successful completion of an assigned task or mission, whether it be at squadron level or at a higher echelon.

Uniformity, simplicity, speed, and flexibility of administration are the fixed goals of any organization. Manuals, procedures, guides, and regulations set the pattern of administration within fairly uniform standards.

The simplification of administrative procedures between various levels of command

is highly desirable. This may be accomplished by the reduction of formal indorsements to a minimum through the use of reference slips, telephone calls, personnel conferences, etc., whenever practicable.

Due to varying local conditions, no uniform rule can be prescribed governing the measures to be initiated for effecting the simplification of administration. However, all commanders must make adequate provision for the simplification of administrative procedures in accordance with general policies.

Any person just entering active duty, regardless of the assignment he receives, will be confronted with some phase of administration almost immediately. It is his responsibility to familiarize himself with the fundamentals of administration as applied to

his particular assignment no matter how small or routine it may appear to be.

If all the operational and training activities are to be carried on successfully it can be seen that careful and detailed organization is essential. Without definite administrative procedures and precise management, none of the advantages of thorough planning and organization, nor the objectives of command, will be achieved.

PUBLICATIONS

AIR FORCE PUBLICATIONS

A newcomer will encounter many procedures which may seem strange, even somewhat impractical. For example, every official decision made by an officer must conform with written regulations; every action taken must be authorized by these same regulations or by written orders. A civilian is often inclined to regard this as evidence of military red tape. But every military man realizes that it is essential if the military establishment is to be run efficiently.

This system, which requires authorization for every official act and change in policy, has proved to be sound and workable over a long period of time. Through it the Air Force and the nation's security are protected from irresponsible acts of individuals in the service; the individual, in turn, is protected from injustice, afforded a source of vital information, and his rights and responsibilities are defined.

The purpose of this chapter is to present information on directives and manuals published by higher headquarters, and to explain the purpose and preparation of orders, bulletins, etc., which commonly are prepared and circulated at lower echelons of the Air Force and Civil Air Patrol.

Preparation

Air Force publications are initiated and prepared by the particular staff agency of Headquarters USAF which has a primary interest in the subject of the publication. The staff agency, however, is responsible for obtaining comments from, concurrences of, or collaboration with, any other interested agencies. When a publication has been finally approved it normally is transmitted to the Air Adjutant General for publication.

Form and Style

The style, arrangement, and format of Air Force publications are determined by the Air

Adjutant General. Where applicable, however, it is customary that the first paragraph in each publication is titled "Purpose," the second "Policy," and the last "Reports Required."

Air Force Regulations, Letters, Bulletins, General Orders, Special Orders, and General Courts-Martial Orders are published in pamphlet form on sheets 8 x 10-1/2 inches in size. The form and size of other publications are prescribed in the AF Regulation pertaining to them.

Titles, Numbers, and Authentication

Air Force Regulations, Letters, Office Instructions, and Manuals are given subject classification in accordance with AFR5-1, and are numbered according to their subject content.

- 5 - Publications
- 9 - Blank Forms
- 10 - Correspondence
- 11 - Administrative Practices
- 14 - Boards and Committees
- 15 - Forms and Reports
- 20 - Organization, General
- 30 - Personnel
- 31 - Military Records
- 34 - Personnel Services
- 35 - Military Personnel
- 36 - Commissioned Officers
- 37 - Warrant Officers
- 39 - Enlisted Personnel
- 40 - Civilian Personnel
- 45 - Reserve Forces
- 50 - Training
- 53 - Schools
- 55 - Operations
- 60 - Flying
- 62 - Flying Safety
- 65 - Supply and Maintenance
- 68 - Property Disposal
- 69 - Property Accountability
- 70 - Procurement and Contracting
- 75 - Travel and Transportation
- 76 - Air Transportation
- 77 - Motor Vehicles
- 80 - Research and Development
- 85 - Installations, General
- 87 - Real Estate
- 89 - Buildings and Structures
- 90 - Pavements and Grounds
- 91 - Utilities Operation and Services
- 95 - Photography
- 100 - Communications
- 105 - Weather
- 110 - Judge Advocate General
- 112 - Claims
- 120 - Inspector General

- 123 - Air Inspector
- 125 - Air Provost Marshal
- 136 - Armament
- 145 - Quartermaster
- 146 - Food Service
- 150 - Program and Manpower
- 160 - Medical Service
- 165 - Chaplain
- 170 - Comptroller
- 171 - Statistical Services
- 172 - Budget and Fiscal
- 173 - Finance
- 174 - Reports Control
- 176 - Nonappropriated Funds
- 181 - Records Administration
- 182 - Postal Services
- 190 - Public Relations
- 200 - Intelligence
- 205 - Security
- 210 - Historical
- 212 - Libraries
- 900 - Miscellaneous

Each pamphlet is assigned a number and a title indicating both its general and specific subject. For example, the regulation entitled "Enlisted Personnel--Discharge" might bear the number 39-300. In this case, 39, the base number, would be the number of the series and general title, "Enlisted Personnel." The subnumber, 300, would be the number of the subtitle and specific subject "Discharge." None of these publications is numbered consecutively, instead, they are published in either new or existing series as the occasion arises. Air Force Bulletins, General Orders, and General Courts-Martial Orders are numbered in a consecutive series for each calendar year. A number is assigned to the Special Orders of the Department of the Air Force for each day in the calendar year series, the paragraphs of the daily Special Orders being combined into the one order of the day and being numbered consecutively.

Changes

Whenever there is a conflict between provisions of publications, the publication bearing the latest date is accepted as the authority.

Publications are amended or added to either by being revised and reprinted entirely, or, if an entire reprint is considered inadvisable, by the publication of a change. Changes are lettered in a consecutive series for each edition of the pamphlet which they modify, e.g., AFR 35-86A, -86B, etc., and are filed with, and immediately preceding, the changed pamphlet. A change does not necessarily supersede previous changes unless such is specifically indicated. Whenever a change affects

other publications to the extent of requiring their modification, changes for all such publications are prepared and submitted at the same time.

Joint Air Force-Army Publications

Whenever an Air Force and Army publication has content which is mutually agreed upon by the two Departments it is published in one of the following three ways: (1) it may be a joint publication numbered serially and jointly authenticated, for example, "Joint Army-Air Force Bulletin"; (2) it may be published as an Air Force Regulation or Letter according to Air Force format and size with a footnote to the effect that identical material is contained in an Army Publication; or (3) a joint publication may be issued carrying both Army and Air Force designations and numbers.

Security Classification

Copyrighted material is never incorporated in Air Force publications without proper consent of the copyright owner.

When a publication contains any matter of a RESTRICTED, CONFIDENTIAL, or SECRET nature, it is classified and marked in accordance with AR 380-5, which outlines security measures. Publications classified as CONFIDENTIAL or SECRET are filed in separate binders and safeguarded in accordance with security regulations. Publications classified as RESTRICTED may be filed in binders with unclassified material provided all files are safeguarded as required by AR 380-5 for RESTRICTED material.

Indexes

Subject and numerical indexes are issued for each type of Air Force publication except that, whenever practicable, consolidated indexes for two or more types may be published in one pamphlet as, for example, Air Force Regulation 5-2, "Numerical Index of Air Force Regulations, AF Letters and AF Manuals." Subject indexes list the subject matter in alphabetical order, numerical indexes list in numerical order all pamphlets and changes currently in effect, and give the number, title, date and distribution symbol of each.

Purpose

Until the reorganization of the military establishment in September 1947, Army Regulations were the basic directives of the Air

*Memo 600-750-30
**AF 35-196

MEMORANDUM 600-750-30 } DEPARTMENTS OF THE ARMY AND
THE AIR FORCE
AF LETTER 35-126 } WASHINGTON 25, D. C., 27 July 1948

PROCESSING OF APPLICANTS FOR ENLISTMENT

General. Recruiting main stations and recruiting stations. II
Installations, units, and Air Force bases. III
Overseas commands. IV
Testing materials. V
Reference. VI

1. GENERAL.—1. Purpose.—This directive prescribes procedures by which applicants for enlistment in the United States Army and the United States Air Force are initially processed and enlisted (or rejected) at recruiting main stations, recruiting stations, installations, units, and Air Force bases, and in overseas commands. These procedures are designed to simplify and standardize, to the fullest extent practicable, the processing of personnel and to implement the basic recruiting directive, Circular 66—AF Letter 35-114, Departments of the Army and the Air Force, 1948.

II. RECRUITING MAIN STATIONS AND RECRUITING STATIONS.—2. Definitions.—a. Recruiting main stations are stations where the prescribed mental and physical examinations are accomplished and the oath of enlistment is administered.

b. Recruiting stations are stations which normally forward applicants for enlistment to recruiting main stations.

c. Applicant processing consists of the following administrative actions: determination of eligibility for enlistment (or reenlistment), completion of enlistment record, administration of oath of enlistment, proper accounting for those enlisted, and forwarding of those enlisted to proper station or providing those rejected with transportation to point of tentative acceptance.

3. Responsibility.—Commanding generals of armies (ZI) are responsible for the functions set forth in paragraph 2c for all applicants for enlistment in the zone of interior, except at Air Force bases, where enlistment functions are the responsibility of the Chief of Staff, United States Air Force.

4. Conduct of initial processing.—The type of treatment received during this processing period will be reflected in the attitude of each individual toward the Army and Air Force. Applicants for enlistment must be impressed with the fact that the Military Establishment operates with efficiency and dispatch and with preferences consistent with military requirements. Commanding officers of recruiting main stations will insure by careful planning the efficient and considerate operation of applicant processing. Action will be taken to avoid, except when absolutely necessary, the issuance of verbal orders or instructions in a peremptory manner. Favorable impressions of the Army and the Air Force gained by applicants at the time of processing may well be the determining factor in a decision on the part of those enlisted to plan a career in either of the services or, for those rejected, in a decision to enlist at a later date if, in the meantime, circumstances operate to permit their enlistment.

*This memorandum supersedes Memorandum 600-750-30, 20 March 1948.
**This memorandum is effective 1 July 1948 unless sooner modified or superseded.
AGO 1873—July 800527—48

Figure 5-13.--A Joint Air Force and Department of

*AFR 45-12
1-1

DEPARTMENT OF THE AIR FORCE
WASHINGTON, 11 JANUARY 1949

RESERVE FORCES

Supply and Maintenance for the Civil Air Patrol (CAP)

Paragraph

Purpose. 1
Scope. 2
Organization. 3
Items of Air Force Supplies and Equipment. 4
Maintenance. 5
Transportation. 6
Post and Lodging. 7
Use of Air Force Facilities. 8
Supplies of Government Funds. 9
Government Property. 10
Subsistence. 11

CHANGE

AIR FORCE REGULATION)
NO. 45-12A)
RESERVE FORCES

Supply and Maintenance for the Civil Air Patrol (CAP)

AFR 45-12, 11 January 1949, is changed as follows:

11. **EXCISE:**

a. Government-owned property excess to CAP and Air Force requirements which is carried on the stock record accounts of National Headquarters CAP, or of the AF-CAP liaison officers, will be processed for salvage and transferred to the nearest Air Force installation in accordance with the provisions of the Salvage Section of AFM 87-1.

b. Government property held on Memorandum Receipt by AF-CAP liaison officers which becomes excess to CAP and Air Force requirements shall be transferred to the nearest Air Force installation in accordance with the provisions of the Salvage Section of AFM 87-1.

c. CAP by Headquarters USAF will be exchanged in kind for serviceable property by Air Force supply and maintenance depots and supply and maintenance organizations in accordance with normal Air Force supply procedures. Government property held by AF-CAP liaison officers which is lost, damaged, or destroyed shall be reported to the nearest Air Force installation in accordance with the provisions of the Salvage Section of AFM 87-1.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

NOYT S. VANDENBERG
Chief of Staff, United States Air Force

OFFICIAL:
L. L. JUDGE
Colonel, USAF
Air Adjutant General

DISTRIBUTION:
5 (plus Pacific Air Command;
Alaskan Air Command; Caribbean
Air Command); G

*This Regulation has been coordinated with and approved by the Chief, National Guard Bureau, as being applicable to the Air National Guard.
NAME: 5-13-49 - 408
9-9315, AF

Figure 5-14.--Air Force Regulation (top) and a change in AFR

Corps. AF Regulations have been supplementary rather than basic in nature. This is still true in many respects, but as the reorganization program continues, they are being supplanted by AF Regulations which are thus becoming the primary administrative directives for the Air Force. As such they are the laws of the service and represent a direct line of authority between the President, as Commander in Chief, and the Air Force establishment. They are executive orders directed by the Secretary for National Defense and the Secretary of the Air Force who act for the President. In content, they outline policies, directives, and other instructions of a permanent nature which apply in general to all Air Force activities.

Titles and Numbering

AF Regulations are issued on 8 x 10-1/2-inch paper and are printed in large, easy-to-read type.

For convenience, the base and subnumber, followed by the number of pages in the regulation and the specific page number, are printed on the upper and outer corner of each page.

Changes

When it becomes necessary to change or amend the greater portion of an AF Regulation, it is revised and reissued. In the heading of the first page, the following sentence appears in parentheses: "This Regulation supersedes AF Regulation (number), (date)." When a minor change or amendment is desired, an amendatory publication, or change, is issued bearing the same title and number as the original, but with a letter added to the subnumber. For example, a change in AF Regulation 11-4 would be numbered AF Regulation 11-4A. Changes are filed in front of the Regulations it amends.

When a publication interprets, clarifies, supplements, supersedes or rescinds another publication, appropriate notations will be made on the affected publication.

Index

A numerical index in which all Regulations are listed in the order of their base and subnumbers is contained as a section in AF Regulation 5-2, "Numerical Index of AF Regulations, AF Letters, and AF Manuals."

AF LETTERS (AFL)

Purpose

Numbered AF Letters contain directives, instructions, or informative matter of either a temporary or permanent nature. Those which are temporary in nature usually are applicable to all Air Force activities; those which are permanent in nature apply only to specific activities. In either case the information which they contain cannot be published as AF Regulations, as it is not both general and permanent in nature.

Titles, Numbering, and Changes

AF Letters are numbered and amended in the same manner as are AF Regulations. The specific title of each follows the "Subject:" in the heading of the letter.

Unnumbered AF Letters

From time to time AF Letters are published as announcements, or to issue instructions which require only one-time action. Also, they may be purely informative in nature. Such letters are not assigned numbers and are, therefore, known as "Unnumbered AF Letters." Because of their temporary nature no index is printed, although some offices maintain numerical indexes based on file numbers and subjects.

AIR FORCE MANUALS (AFM)

Purpose

The Air Force has grouped its publications which might otherwise be referred to as guides, handbooks, pamphlets, textbooks, or workbooks under the one classification, "Manuals." Manuals whose content is of general interest and application throughout the Air Force or throughout more than one major command are called "AF Manuals." Those of more limited scope and of primary interest to only one major command are listed officially as "Local Command Manuals," and bear the name of the command for which they are intended.

Titles and Numbering

Manuals are numbered as explained earlier in this chapter. Basic titles are listed in AFR 5-1. Secondary titles specifically identify

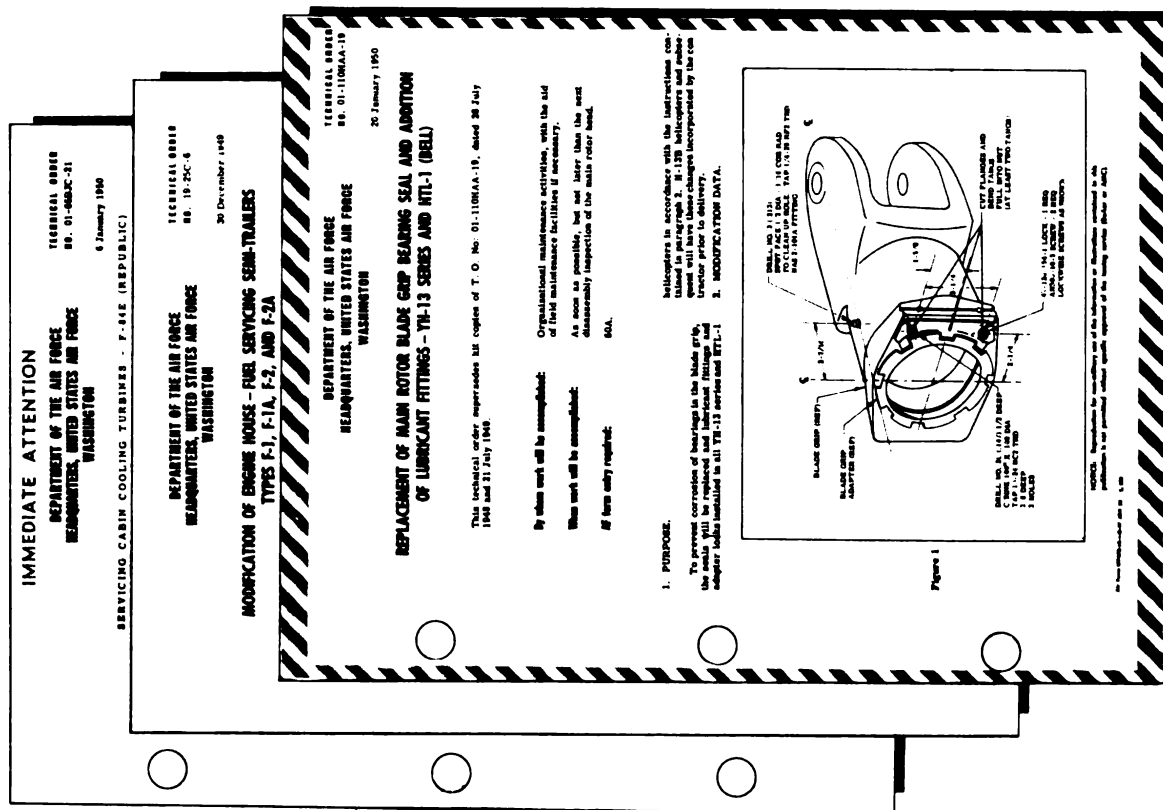


Figure 5-16. --Air Force Technical Orders

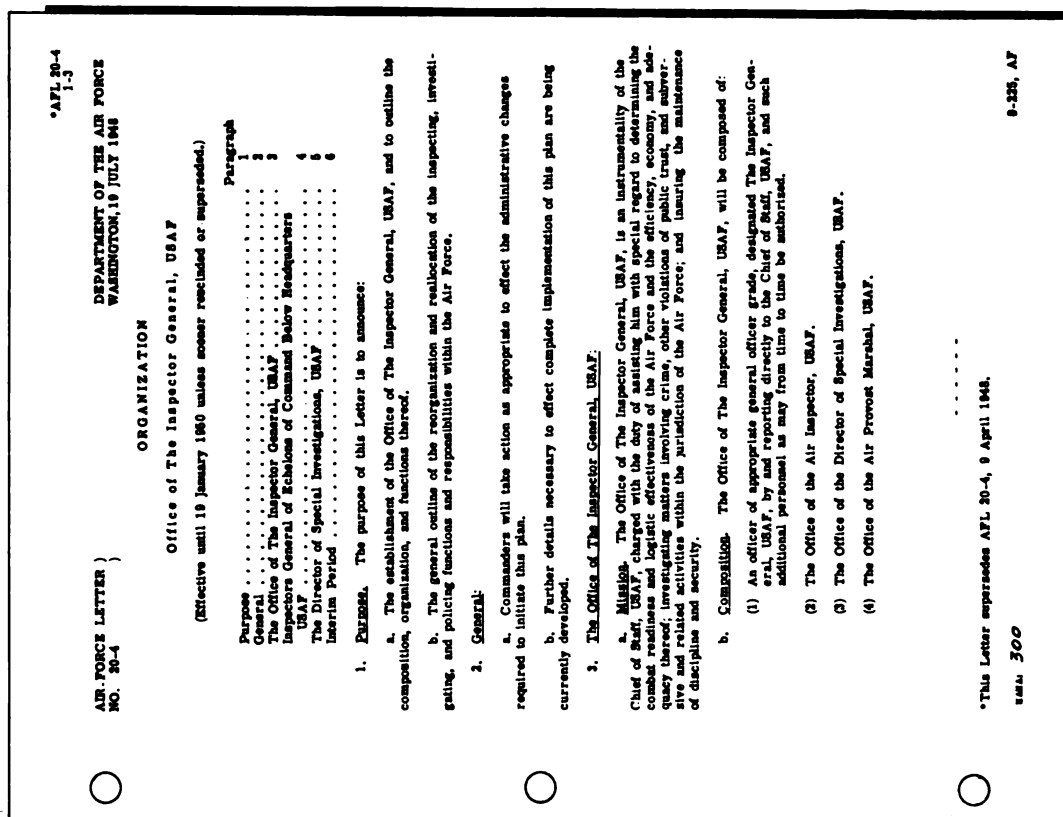


Figure 5-15.--An Air Force Letter

subject content, and such terms as "hand-book," "guide," "workbook," may be used in the title of the manual.

AF MANUAL	ConAC MANUAL
NO. 20-1	NO. 50-5

AF TECHNICAL ORDERS

Purpose

All Air Force personnel whose duties involve the maintenance of equipment are fully aware of the essential importance of AF Technical Orders (T.O.'s). Their primary purpose is to direct the specific procedures to be followed and materials to be used in the maintenance of Air Force technical equipment.

Titles

The titles of Technical Orders have three elements:

The general title states the general property class to which the T.O. pertains, for example, "Airplanes and Maintenance Parts."

The group title places related subject matter under a main class group, for example, "Boeing" or "Pratt and Whitney," placed under the general title.

The subject title indicates as precisely as possible the nature of the order and the particular equipment or part to which the T.O. pertains, such as "Safetying of Life Raft Release Mechanism B-50B."

The complete title, as developed above, would read, "Airplanes and Maintenance Parts, Boeing, Safetying of Life Raft Release Mechanism B-50B."

Numbering

The numbering of Technical Orders is in two or more parts. The first part is a two-digit number which stands for the general property class. As an example, 06 is the first part of the number for all T.O.'s pertaining to "Fuels and Lubricants," and is commonly referred to as "Class 06." The second part identifies all orders pertaining to a particular group title, for example, 06-10 pertains to all lubricants. The third part of the number, when used, stands for the order of publication among all orders within a particular subdivision, for example, 06-10-1, 06-10-2, etc. A minor amendment of an order in which only a part is revised is designated by the addition of a letter to the number such as, 06-10-2A.

Index

A general index, T.O. No. 00-1-1, which is published by the Air Materiel Command every four months, lists all Technical Orders numerically. A supplement to this index which bears the number 00-1-1A, 00-1-1B, etc., is published twice a month.

OTHER AIR FORCE PUBLICATIONS

There are other Air Force publications described in AF Regulation 5-1, which are too specialized in application to receive detailed treatment in this section. Publications concerning standards of proficiency for the training of units and individuals, and Materiel and Service Directives which establish specific supply procedures for the Air Force are typical of this category. General, Special, and Letter Orders are among others which will be explained.

ARMY REGULATIONS

Purpose

Army Regulations serve as the primary administrative regulations for the government of the military establishment. As such, they provide the basic foundation upon which the independent Air Force is building its administrative structure.

Numbering and Titles

Army Regulations are contained in several thick and formidable-looking volumes. However, they are bound according to a numbering and titling system which is both logical and simple.

As is explained in the previous section under Air Force publications, each regulation is assigned a base number and a subnumber corresponding to its general title and subtitle, respectively. For example, the regulation titled "Finance--Longevity Pay" is numbered 35-2360, "Finance--Travel Pay" is 35-4540. A complete list of base numbers and subnumbers is contained in AR 1-10.

The base number and subnumber are printed in the heading of each regulation, and, for convenience, on the upper and outer corner of each page above the numbers of the paragraphs contained on that page.

Changes

It is imperative that all changes be noted immediately on the regulation affected. A

recommended procedure is for the clerk to turn to the file copy and note the change conspicuously in the outside margin of the affected paragraph, for example, "C 3". This would denote that the regulation was changed by the third change. If the change deletes part of the regulation, he should line out the affected paragraph with a diagonal line so that the deleted material remains legible. If the change adds a subparagraph to a paragraph, the clerk should put a notation in the margin reading, for example, "(h) by C 3".

Indexes

Each Army Regulation is indexed by a section at its beginning. A subject index of all regulations is published in AR 1-5. A numerical index of all current and suspended regulations is published in AR 1-10. A suggested system of maintaining AR 1-10 which is adaptable to indexes of other publications is outlined below:

One of the following check marks should precede the number of each publication listed:

Black check mark--indicates the publication is required and is in the files.

Blue check mark--indicates the publication is required but is not in the files.

Red check mark--indicates the publication is not required and is not in the files.

In addition, the following standard annotations are made wherever appropriate in the index:

When a publication is superseded by another of the same number and title, the date of the superseded publication is red-lined, and the date of the new publication entered in red directly above the old date.

When a publication is rescinded or superseded by another of the same or a different series, number, and title, the number, date, and title are red-lined (underlined in red) and a notation, "Rescinded (Superseded) by (type), (number), (date)," entered in red directly above the old entry.

When a publication is rescinded or superseded by another of the same number but with a different title, the date and title of the rescinded or superseded publication are red-lined and the date and title of the new publication entered in red directly above the old number and title.

When a publication is changed from one series to another, the number, date, and title of the changed publication are red-lined and a notation, "Changed to (type), (number), (date)," entered in red directly above the old entry.

When a publication is amended, the number and date of the amendment are entered in red

directly under the number and date of the publication amended.

When a publication is received that is not already listed in the index, the number, date, and title are entered in red in the index in the proper place.

Use of Army Regulations

Certain fundamental rules of procedure must be observed if Army Regulations and other Army and Air Force publications are to be used efficiently.

Reference to the appropriate index--in this case it is AR 1-10.

An officer should realize that he often will not find in one regulation all the directives required for any one job assigned to him. For example, when an enlisted man dies it is necessary to use all of the following regulations in order to notify the proper authorities and the next of kin, to have the remains prepared for burial and shipped to its home, and to close accounts:

AR 600-50, "Personnel--Deceased," is the basic regulation.

AR 40-108, "Medical Department--Report covering the cause of death."

AR 345-400, "Military Records--Morning Reports."

AR 615-40, "Enlisted Men--Clothing and Equipage."

AR 35-2600, "Finance Department--Soldiers' Deposits."

AR 35-2480, "Finance Department--Payment of Enlisted Men upon Separation from the Service."

AR 35-1540, "Finance Department--Gratuity upon Death and Settlement."

AR 55-120, "Transportation Corps--Transportation of Individuals."

AR 30-1830, "Quartermaster Corps--Burial Expenses."

AR 375-475, "Military Records--Final Statement."

Think a problem through carefully if you would find all the regulations concerned. Thus, if the question concerns enlisted men, the general title will be either "Personnel" or "Enlisted Men" and the 600 to 615 series of regulations will be the primary reference. If a question of pay is also involved, the Finance Department, series 35, would be consulted.

DEPARTMENT OF THE ARMY (CIRCULARS)

Purpose

Circulars issued by the Department of the Army contain administrative regulations of

wide, but temporary, application. They also are used for the expeditious publication of a directive of a permanent nature pending its publication as, or incorporation into, an Army Regulation.

Titles and Numbering

Department of the Army (DA) circulars are numbered consecutively for each year. Consequently, their titles and numbers bear no parallel relationship as do those of Air Force and Army Regulations. Because circulars frequently remain effective past their calendar year, and new ones are issued daily, it is entirely possible for two or more covering different subjects to bear the same number. Hence, it is imperative when referring to a circular that both its number and annual series be indicated, for example, Section IV, DA Circular 53/48.

Changes

The top of each circular bears a statement giving a date of expiration, after which it becomes void unless sooner rescinded or superseded.

Index

There is no index for DA Circulars. They are filed in binders in the order of their issuance, with the most recent one in the calendar-year series on top.

DEPARTMENT OF THE ARMY MEMORANDUMS

Purpose

Department of the Army memorandums contain routine orders and instructions that are applicable to a limited number of headquarters or agencies.

Numbering and Titles

DA memorandums are numbered according to their subject matter under the same numbering classification and in the same manner as are Army Regulations. A second subnumber is frequently added for specific identifications; for example, each memorandum on the subject of efficiency reports bears the number 600-185 followed by a subnumber, 1, 2, 3, etc.

Changes

Memorandums are revised, amended, rescinded, and filed in the same way as Army Regulations.

Index

A numerical index is contained in DA Memorandum 1-10-1 which gives the date, titles, and changes of each memorandum.

OTHER DEPARTMENT OF THE ARMY ADMINISTRATIVE PUBLICATIONS

The Department of the Army issues other directive publications whose application is so limited that they merit only brief mention here.

DA Letters contain instructions which are of a very temporary nature and addressed to only a few individuals or offices.

DA Bulletins are similar to DA Circulars in every respect except content. They are used most frequently to inform the Army as a whole of Presidential proclamations and acts of Congress.

DA General and Special Orders are used to announce such official acts of the Secretary of the Army as citations, awards, and promotions.

Other directive publications of the Department of the Army are listed in Field Manual 21-6, "List and Index of Department of the Army Publications."

FIELD AND TECHNICAL MANUALS

Purpose

Field and Technical Manuals are issued by the Department of the Army to "cover phases of military training and the operations of its arms and services." Field Manuals are the primary means of promulgating basic doctrines of military training and operations. Technical Manuals supplement Field Manuals. They amplify certain subjects which are essential in accomplishing the training and operations prescribed in the Field Manual.

Numbering

Field and Technical Manuals are permanently bound. Each has a base number and a subnumber. The first denotes the arm or service, such as 1 for Air and 8 for Medical; the second indicates specific subject matter. Subnumbers up to 199 are assigned to Field

Manuals; subnumbers 200 and higher are reserved for Technical Manuals. As an example of each, the numbers 1-10 to 1-195 designate Field Manuals for Air, the numbers 1-205 to 1-1100 denote Technical Manuals for Air.

Use of Field and Technical Manuals

One has only to consult an index of these manuals to realize their great value to training and operations. A total of seventy-three bear the base title, "Air," and many more are closely related to Air Force activities. Their frequent use is not only desirable but necessary.

Index

Field Manual 21-6, "List and Index of Department of the Army Publications," contains a numerical index of both Field Manuals and Technical Manuals. Issued quarterly, this index is the most comprehensive of any discussed in this chapter. It contains, in addition to the above, all administrative, supply and training publications of the Army, and it lists all forms stocked by Adjutant General depots.

SPECIAL REGULATIONS

Special regulations are a medium for the publication of administrative instructions and directives previously published in a Technical Manual, Technical Bulletin, or Department of the Army Pamphlet or Memorandum, etc. It also is intended to supplement Army Regulations by publishing detailed administrative procedures and other implementing instructions to basic policies contained in Army Regulations.

ROUTINE PUBLICATIONS

In the preceding sections, publications which are issued by the Departments of the Air Force and the Army and by major command headquarters have been treated with emphasis on what each publication contains and how it is used.

The section which follows will deal with publications issued at base and squadron levels which every administrative officer, sooner or later, must prepare. Consequently, emphasis is placed not only on what these routine publications contain, but on how they are prepared.

Orders are the usual means by which a commander transmits his instructions to units or individuals of his command. As

SR 32-305-50

SPECIAL REGULATIONS
No. 32-305-50

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 9 May 1950

CLOTHING AND EQUIPAGE
SALES TO CIVIL AIR PATROL MEMBERS

	Paragraph
General.....	1
Items authorized and source of supply.....	2
Purchase procedure.....	3

1. General.—The procedures herein are prescribed by the Department of the Army for the sale of uniform items to Civil Air Patrol senior members, both male and female. Sales are authorized to Civil Air Patrol cadets, in sizes available, when they are accompanied by Civil Air Patrol senior members.

2. Items authorized and source of supply.—The items authorized for sale to Civil Air Patrol senior members are indicated in tables I and II, together with the quartermaster source of supply. The items listed are authorized for sale only at the specified supply source, if available, in the quantities indicated. The present policy of restricting sales of items which are in critical supply to officers and enlisted personnel on active duty will also be applicable on sales to members of the Civil Air Patrol.

3. Purchase procedure.—Senior members of the Civil Air Patrol desiring to purchase Quartermaster Corps items will follow the procedure outlined below.

a. Over-the-counter sales.—Purchases through installations and the Military District of Washington sales store will be over-the-counter purchases only of the available items authorized in tables I and II.

(1) Identification.—Prior to making the purchase, the Civil Air Patrol senior member will present CAP Form 14-0 to the station supply officer or the sales officer of the Military District of Washington sales store, located at Fort Lesley J. McNair, Washington 25, D. C., demonstrating that he is an active member in good standing in the Civil Air Patrol.

(2) Certification of purchase.—To complete the purchase, the Civil Air Patrol senior member will execute a certificate to the effect that the articles are for his personal use and that the items being purchased plus items purchased previously will not provide him with quantities in excess of the allowances indicated in Tables I and II.

AGO 3257B—May 1949—50

Figure 5-19.--A Special Regulation.

such, they must be "clear, concise, and subject to only that interpretation desired by the commander." These orders are divided, for instructional purposes, into two main groups: combat orders and routine orders.

Combat orders are issued to cover tactical operations in the field. A detailed treatment of their contents and preparations is given in Field Manuals 1-75 and 101-5.

Routine orders cover the normal administrative operations that occur in either garrison or field service. They are subdivided into the following classes:

General Orders; Special Orders; Letter Orders; General Court-Martial Orders; Special

Court-Martial Orders; Bulletins; Circulars; and Memorandums. Each category will be considered separately following a discussion of those features which are common to all.

Common Features

All routine orders are similar in certain features.

Preparation

The preparation and publication of routine orders is the responsibility either of the adjutant general or the adjutant of a command.

Effective Date

An order having a general application is effective upon its publication unless it contains a statement giving its effective date. An order pertaining to an individual is effective upon its receipt unless otherwise specified therein.

Style

As mentioned above, orders should be clear, concise, and subject only to the interpretation desired by the commander. They tell why, when, where, and how an action is to be accomplished, and who is to accomplish it.

Copies

Sufficient copies of an order are prepared to complete necessary distribution, and to provide for the permanent file in which copies of all orders issued by a headquarters must be maintained.

Form

Printed orders may vary in size but should be uniform within any one headquarters. Orders which are not printed are produced on 8x10-1/2-inch sheets of paper. The method of reproduction is determined by the number of copies required and the facilities available. When they are typed, only one side of the paper is used; when prepared by mimeograph or other duplicating processes, both sides are used. Margins are the same as used in military correspondence.

Components

All routine orders are comprised of three major components: heading, body, and authentication. A fourth component, distribution, is usually included.

Heading

This contains the letterhead, date, and designation of the order. The letterhead, at the top of the first page of an order, contains the designation and address of the issuing headquarters. The headquarters is written in capital letters centered on the page; the address is placed on the following line or lines.

The date is placed one blank line below the last line of the letterhead in such a manner that it ends at the right margin. The date entered is always the current date, never are orders postdated or antedated.

The designation of an order gives its type and number. The type of the order is written in capital letters, for example, "SPECIAL ORDERS," beginning at the left margin immediately opposite the date. The word "NUMBER" is placed immediately below, and an Arabic numeral indicating the sequence of the order in the calendar year is so placed that the last digit is directly below the last letter of the order type. In the case of orders and special orders, only one number is used on any one day, separate directives being placed in different paragraphs of the orders.

Body

The body, or substance, of an order will be discussed in detail later in this section. Certain generalities, however, can be stated here.

The Air Force always indicates the arm or service of the individual (for example, MAJ. JAMES I. QUACK AO36420 USAF) regardless of whether the arm or service seems necessary. When personnel are mentioned who belong to the headquarters issuing the order, "This HQ" is stated rather than the complete designation of the headquarters. When an individual's assignment is obvious or unnecessary, it is omitted.

Authentication

The authentication is that part of an order which makes it a directive. It usually contains a command line, signature, and an official section. However, if the order is signed by the commander, the command line and official section are omitted.

The command line is the phrase which states who is issuing the directive. It reads "BY COMMAND OF ..." when the commander is a general officer, and "BY ORDER OF ..." when the commander is below the rank of a brigadier general. Normally, the command line is placed two spaces below the

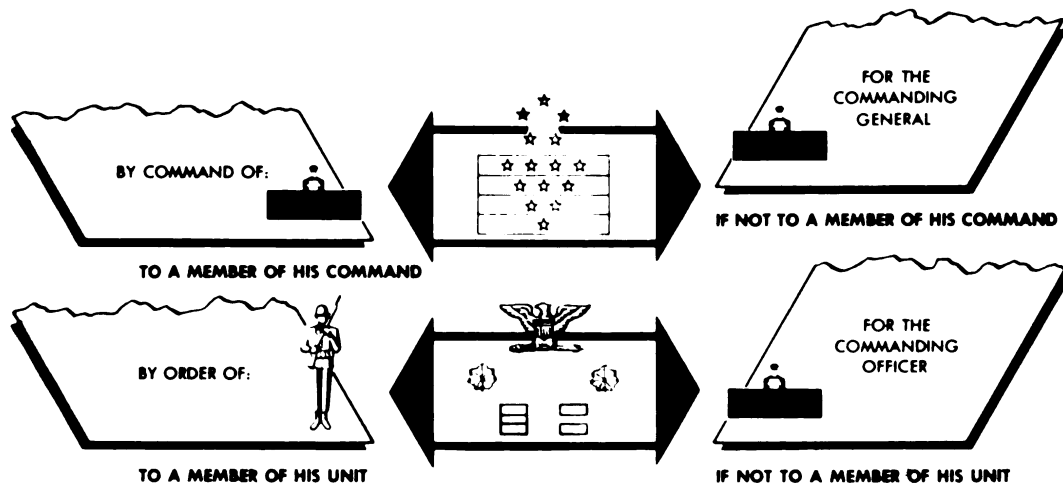


Figure 5-20.--Use of the Command Line.

last line of the body of the order, and indented nine spaces from the left margin. Thus its first letter is below the first letter of each paragraph. It is always typed in capital letters.

The typed portion of the signature of the chief of staff, adjutant general, or adjutant is normally placed three lines below the command line and in such a way that it begins one space to the right of the center of the page. The name is typed in capitals, and the rank and position in capitals and small letters below.

The word "OFFICIAL" is typed opposite the first line of the signature. The first letter of the word is placed on the left margin. The typed signature of the air adjutant general, or the air adjutant, is placed five lines below the word "OFFICIAL." It is typed in block style and indented two spaces from the left margin. The authentication is completed by the placing of the written signature over the typed signature, or by the placing of the imprint of the official seal of the headquarters over the word "OFFICIAL."

Distribution

A component of each order pertains to its distribution. The word "DISTRIBUTION" is placed at the left margin two lines below the type signature in the official section. It is followed by a list of the individuals, organizations, or installations to which copies of the order are furnished. Standard distributions of orders may be designated by letters such as A, B, D, (Figure 2-10). The number of copies furnished each recipient is also shown.

GENERAL ORDERS

Purpose

General orders are directives which apply to all, or a large part, of a command. They are of permanent duration and of such nature as to be readily incorporated into established regulations. The purposes for which general orders are published can be surmised from the following partial list:

- To announce assumption of command.
- To activate or inactivate a unit or organization.
- To announce the closing or opening of a headquarters.
- To announce the appointment of a chief of staff, assistant chief of staff, or the head of a special staff section of a headquarters.
- To announce the personnel staff of a general officer.
- To announce awards and decorations.

Style

Because of the nature of a general order, it must be written clearly and concisely. Clarity is not sacrificed for brevity, telegraphic style and abbreviations are not normally used, and punctuation is used wherever necessary.

Numbering

General orders are numbered in sequence for each calendar year. Each order carries a separate number, and two or more orders may be issued in one day.

WING HEADQUARTERS
COLORADO WING, CIVIL AIR PATROL
LOWRY AIR FORCE BASE
Denver, Colorado

1 July 1949

GENERAL ORDERS
NUMBER 1

Under the provisions of the Constitution and By-Laws of the Civil Air Patrol (Incorporated), the undersigned assumes command of the Colorado Wing, Civil Air Patrol, effective this date.

John A. Brown
JOHN A. BROWN
Colonel, CAP
Commanding

DISTRIBUTION: A

Figure 5-24.--A General Order.

WING HEADQUARTERS
CONNECTICUT WING, CIVIL AIR PATROL
SOUTH MERIDEN AIRPORT
SOUTH MERIDEN, CONNECTICUT

9 January 1949

GENERAL ORDERS
NUMBER 121

Section I
Staff Assignments

1. MAJ HARRY F ARNOLD CAP 1-1-21, Connecticut Wing, Civil Air Patrol is announced as head of staff section, A-3, vice LIEUTENANT JOHN S. MARCUS CAP 1-1-20 Connecticut Wing, Civil Air Patrol.

Section II
Closing Headquarters, New Haven, Opening South Meriden

2. Headquarters Connecticut Wing, Civil Air Patrol will close at New Haven, Connecticut, at 2400 hours, 14 December 1949, and open at South Meriden, Connecticut, 0001 hours, 15 December 1949.

BY ORDER OF COLONEL BLANK:

FRANCIS X. DOE
Captain, CAP
Adjutant

Francis X. Doe
FRANCIS X. DOE
Captain, CAP
Adjutant

DISTRIBUTION: 2

Figure 5-25.--A General Order.

Extracts

Extracts of a general order are never issued by the headquarters publishing the order. Subordinate headquarters, however, may make extracts for distribution within their respective commands.

Form

The body of a general order may be subdivided into sections. All paragraphs that pertain to a particular type of announcement are placed in the same section. Sections are numbered consecutively using Roman numerals, and each is given a title.

A numbered paragraph is used for each subject in the body of the order. The activation of two or more units, or the assignment of two or more staff officers, may be placed in the same paragraph. Paragraphs are numbered consecutively within each section; subparagraphs are indicated and indented as in correspondence.

Distribution

Distribution is indicated on the order. Because of their nature, general orders are usually given wide distribution. A copy is always furnished to the next higher headquarters, and to such commands as may be interested.

SPECIAL ORDERS

Purpose

Special orders contain information which is directive in nature and individual in application.

Style

Telegraphic English is used with such extraneous words and phrases as "a," "the," and "and" eliminated.

Abbreviations and symbols are used wherever practicable. Authorized abbreviations are used as separate words without interior spacing. Capital letters are used in names of cities, towns, and first and last names of individuals. Military grades and titles are abbreviated. Serial numbers follow the names of individuals, and are written without a hyphen between the letters AO or AF and the numbers. The organization and arm, or service, follow the individual's name and serial number, and are indicated by authorized abbreviations or symbols. Orders directing

a permanent change of station include the abbreviation PCS.

Other abbreviations and symbols may be used provided a key or legend is contained in the order.

Each paragraph is numbered but not subdivided. A block system of paragraphing is used whenever practicable without repetition of paragraph heading; this system provides for the inclusion of the maximum number of names under one heading.

Form

Special orders are numbered in series for the calendar year and no more than one order may be issued on one day. The order may contain any number of paragraphs. Extracts of a special order may be published during the day.

Authority

When the commander in whose name the order is issued has been given the right to act by official directives, no authority is entered on the order; in all other cases authority for issuing the order is stated therein.

Distribution

Distribution of special orders must include each individual and organization named in the order in addition to the standard distribution given all special orders. Sufficient copies should be distributed to individuals named, in order to provide for such special needs as support for travel and other vouchers.

Extracts

An extract copy of a special order includes one or more paragraphs in lieu of the complete order. The heading and authentication of an extract are identical to that of a complete order. The word "Extract" is typed at the center of the page in line with the order number.

The paragraph numbers in an extract agree with the numbers of the paragraph or paragraphs of the complete order.

Extracts are issued for several purposes. In order to facilitate operations, it frequently is desirable to publish extracts from time to time during the day. Distribution also may be facilitated by use of extracts whenever the paragraphs of a large order require different distribution.

HEADQUARTERS
AIR COMBAT COMMAND
Smith Air Force Base, New York

1 October 1948

Special Orders }
Number 176 }

1. Lv granted following off:

Name	Days Lv	Effective O/A
CAPT JOHN L SMITH A040004 USAF	8	10 Oct 48
1ST LT JACK R SIMS A063028 USAF	3	20 Oct 48

2. Secret.

3. So much of par 7 SO 152 this hq 6 Sept 48 pertaining to lv of CAPT JOHN SMITH A040004 USAF as reads "DAYZ" is amended to read "7 days."

4. Par 11, SO # 168, this hq, 21 Sept 1948, pertaining to TOY of Officers is amended to include:

The VOGG, ACC, 21 Sept 1948, directing Sgt David J. Deesen, AF 12345666, 307th AFBU, Smith AF Base, NY to accompany the mil acft used on the above journey in the capacity of crew member, and upon compl of journey return proper sta, Smith AF Base, NY, are confirmed and made a matter of record under exigencies of the service which prevented the issuance of orders in advance. AR 35-4810 as amended, applies for payment of per diem and/or monetary allowance for qtrs and subs for EM.

5. Cpl John E. Bartman, AF16123444, (Primary 065) White) M. is trfd in gr fr Hq & Hq Sq, ACC, Smith AF Base, NY, to 13th Fighter Wing, All Weather, Smith AF Base, NY, rptg 2 Oct 1948. No travel involved. PMA. EDOM: 4 Oct 1948.

6. CAPT ROBERT R. ROE, 10-65655, USAF (Primary 4823) (Not rated) (QOS) (19 most OC-Res'd 29 Aug 48) (Basic A/S-USA) (Duty A/S-USA) (White) M. is rld fr asgmt to and dy with Hq & Hq Sq, ACC, Smith AF Base, NY, is asgd 6222nd AFBU (Hq AMC) Wright-Patterson AF Base, Dayton, Ohio, rptg 6 Oct 1948, for dy in the Flight Test Division. WP. PMA. PCS. TPA, TDM. 901-15 P 431-02, 02 04, 07 2190425 S 98-999 and 901-215 P 431-02 219045 S 98-999. EDOM: 8 October 1948. Two (2) days delay enroute attd, chargeable as lv, provided it does not interfere with rptg date.

BY COMMAND OF MAJOR GENERAL JONES:

HENRY M. GIBERT
Major General, USAF
Vice Commander

OFFICIAL: *Carl O. Adgers*
CARL O. ADGERS
Colonel, AGD, (USAF)
Adjutant General

Figure 5-23.--A Special Order.

WING HEADQUARTERS
NEW YORK WING CIVIL AIR PATROL
Room 544 Post Office Bldg.
Elliot & South Division Sts.
Buffalo 3, New York

5 February 1949

SPECIAL ORDERS
NUMBER 221

EXTRACT

2. Sgt John E. Deese CAP 8-9-90 3rd Op this Hqs is rld fr SD this hqs and trfd to 2nd Op this Hqs eff 10 Feb 1949.

3. So much of par 9 SO 200 this Hqs as reads "1ST LT GERRARD E DESEAN CAP 8-9-1" is amended to read "1ST LT GERRARD E DESEAN CAP 8-9-1."

4. The fol named CAP personnel this Hqs are placed on TOY for aprx six (6) days WP o/a 1 Mar 49 fr Brooklyn NY to Bolling AFB DC for purpose of coordinating AF-CAP activities upon compl ret to proper sta Brooklyn NY. TRMAA TRMAA CIPAF TDM CAP Reg 8-3. NO FOR DISM AUTH. AUTH: Ltr Matl Hqs CAP USAF Bolling AFB DC Subj: "Request for Orders" dtd 1 Feb 49.

CAPT JOHN H. SMITH CAP 8-9-111
1ST LT FRANK M. DOE CAP 8-9-110
M Sgt Eddie F. Jones CAP 8-9-234

BY ORDER OF COLONEL FARDEALE:

EDITH H. MOONEY
Captain, CAP
Adjutant

OFFICIAL: *Edith H. Mooney*

I certify this is a true copy:

A. B. Chase
A. B. Chase
Capt, CAP

DISTRIBUTION:
1 ea OF cone
1 ea Am cone
1 ea Op cone
1 ea Sq cone
1 File

Figure 5-24.--A True Copy of an Extract of a Special Order.

Consolidated Orders

A consolidated order is a compilation of all extracts of a special order issued during the day. These extracts are brought together by (1) issuing a complete new order containing all paragraphs in their proper sequence, or (2) preparing a cover sheet to which is attached all copies of published extracts.

True Copies

Copies of paragraphs contained in a special order may be made when necessary. Such copies are prepared by copying the heading and the authentication sections in their entirety and the paragraph of which extract copies are required. Should this paragraph pertain to a number of individuals and the copy is needed for only one of the group, the other names are omitted. A line of asterisks is used to indicate omissions. The words A TRUE COPY, followed by the typed signature of an officer, are placed on the page below the last data extracted from the order. The written signature of the officer authenticating the true copy is placed above his typed signature on all copies.

Classified Paragraphs

Some paragraphs of a special order may contain information which should be classified for security reasons.

To avoid classifying the entire order, classified paragraphs are always published as extracts.

The classification of a paragraph, "SECRET," "CONFIDENTIAL" or "RESTRICTED" is stamped in red at the top and bottom of each page. In the case of paragraphs classified as "SECRET," a block showing classification and authority therefor is placed on each copy.

Amendatory Paragraphs

A paragraph of a special order may be amended by publication of an amendatory paragraph in a subsequent order. Such a paragraph follows a standard phraseology. It includes complete reference to the order and paragraph being amended; the part of the paragraph being amended is cited where practicable; and the extract being amended and the new phrase are placed in quotation marks and underlined.

Confirmatory Orders

When a situation demands immediate action, a commander may issue verbal orders.

Whenever such verbal orders involve the expenditure of public funds or the appointment of a board of officers, confirmatory written orders must be issued. The following statement is included in confirmatory orders where travel is involved.

"Such orders having been issued under exigencies which prevented issuance of orders in advance..."

LETTER ORDERS

Purpose

A directive may be written as a letter to the individual concerned through normal military channels. Such a letter is known as a "letter order," and is used primarily in connection with travel. Other uses include: the appointment of investigating officers, and the publication of classified instructions in place of classified extracts of special orders.

Letter orders may be numbered in sequence during the calendar year where such method of identification is considered desirable.

The form of a letter order is the same as that used for a military letter.

COURT-MARTIAL ORDERS

Purpose

Court-martial orders are issued by each commander having authority to order the execution of a sentence of a court-martial to announce the result of a trial by court-martial or for announcing the mitigation, remission, or vacation of a sentence.

Two types of court-martial orders are issued. General court-martial orders are used where trial has been by general court-martial; special court-martial orders, where a trial has been by a special court-martial.

DAILY BULLETINS

Purpose

A daily bulletin is an information sheet and usually contains official directives as well as official and unofficial information. It is published at most military installations.

Style

Items are written clearly in simple language so that the average reader will have no difficulty in understanding the meaning. Only the most common abbreviations are used.

HEADQUARTERS
FIRST AIR FORCE
Fort Slocum, New York

General Court-Martial)
Orders Number (83) 28 April 1949

Before a general court-martial which convened at Mitchel Air Force Base, Mitchel Field, New York, pursuant to paragraph 30, Special Orders Number 176, this headquarters, 9 March 1949, was arraigned and tried:

Private 1/c1, James B. Johnson, AF 33178961, 52d Base Service Squadron, Fighter, All Weather, Mitchel Air Force Base, Mitchel Field, New York.

CHARGE: Violation of the 58th Article of War.
Specification: In that Private 1/c1 James B. Johnson, 52d Base Service Squadron, Fighter, All Weather (Base Service), Mitchel Air Force Base, did at Mitchel Air Force Base, Mitchel Field, New York, on or about 0630 hours, 6 January 1949, desert the service of the United States and did remain absent in desertion until he was apprehended at Bronx, New York on or about 1320 hours, 8 March 1949.

PLEAS

To the Specification of the Charge: Guilty except the words "desert" and in desertion, substituting therefor respectively the words "absent himself without proper leave from" and "without proper leave"; of the excepted words, not guilty of the substituted words, guilty.

Not guilty, but guilty of a violation of the 61st Article of War.

SENTENCE

To be confined at hard labor at such place as the reviewing authority may direct for six months and to forfeit \$32.00 per month for six months. (There is no evidence of previous convictions).

The sentence was adjudged 13 April 1949.

The sentence is approved and will be duly executed. Mitchel Air Force Base, New York, or elsewhere as the Secretary of the Air Force may direct, is designated as the place of confinement.

BY COMMAND OF MAJOR GENERAL WEBSTER:

CLIFFORD C. BUTT
Brigadier General, USAF
Vice Commander

OFFICIAL:

R. J. Erickson
R. J. ERICKSON
Colonel, USAF
Adjutant General

DISTRIBUTION: "D"

Figure 5-26.--A General Court-Martial Order.

WING HEADQUARTERS
COLORADO WING CIVIL AIR PATROL
LOWRY AIR FORCE BASE
Denver, Colorado

29 June 1949

SUBJECT: Letter Order

TO: Lieutenant Grover J. Hayes
Winslow Squadron, 3rd Group
Colorado Wing, Civil Air Patrol
Winslow, Colorado

LIEUTENANT GROVER J. HAYES CAP 4-6-5 Colorado Wing CAP is authorized to proceed from Winslow, Colorado to Denver, Colorado for the purpose of coordinating AF-CAP activities. Upon completion return to proper station Winslow, Colorado. Will proceed o/a 30 June 1949 for approximately nine (9) days. TMAA TSCAPM CIPAF TDN AUTH: CAP Reg 5-3 and Par 3e, AF Reg 45-13 and CAP Reg 76-1. NO PER DIEM AUTHORIZED.

BY ORDER OF COLONEL FARRINALE:

James J. Farrin
JAMES J. FARRINALE
Major, CAP
Adjutant

Figure 5-25.--A Letter Order.

Form

Heading. The usual heading for routine orders, appropriately modified, is used. Special decorative headings are employed at some installations.

Daily bulletins are numbered serially for each calendar year. In some cases, they are issued on alternate days or even less frequently.

Body. There are two methods of publishing the body of the daily bulletin. One is to have an "Official" and an "Unofficial," or "Information," section (Figure 2-17). The other is to intermingle items, designating in some manner those which are official.

In the two-section form, the matter placed in the "Official" section may be advisory or directive in nature; such directives are usually of temporary duration. The word "OFFICIAL" may be placed at the head of this section, but is seldom done. Each item is placed in a separate paragraph. Subparagraphs such as "A" and "B" are avoided. Each paragraph of the official section is numbered. An authentication follows this section in the same manner as in other types of routine orders.

The "Unofficial" section is always marked by placing the words "UNOFFICIAL" or "INFORMATION" centered on the page at the head of the section. Items of timely information such as motion picture programs, athletic events, notice of lost or found articles, and church services may be placed in this section. Paragraph numbers are not assigned and no authentication is given.

In the simplified form, official and unofficial items are intermingled. This method has the advantage that items can be cut on the stencil as they are received by the clerk. (In the preceding method it is necessary to wait until the official section has been completed before any additional information can be typed on the stencil.) Each item is placed in a separately numbered paragraph for easy reference, regardless of whether it is official or unofficial. Subparagraphing is avoided.

Official items are authenticated by placing the word "OFFICIAL" in parentheses at the close of the items, followed by the initials of the adjutant and his title, for example: (OFFICIAL JDD Adj). In order to insure the legality of daily bulletin official sections, a statement is placed in post regulations or in post general orders to the effect that official notices in the daily bulletin are regular orders of the post. In addition, the adjutant initials the file copy of the daily bulletin. For other copies his typed initials suffice.

At the end of the year, these monthly compilations should again be reviewed and items still extant republished in post regulations or other permanent form.

CIRCULARS AND MEMORANDUMS

Purpose

Permanent and semipermanent instructions may be published in a series of circulars or memorandums. Either one, but not both, of these are used.

The first paragraph states the objective or general purposes of the order. It also gives a brief outline of the action desired, without details. In many cases, the first paragraph is the complete order.

The second paragraph (optional) is explanatory in character. It states the background of the order and the policy involved in its issuance. The paragraph is so drawn as to enable subordinates to understand the reasons for the order, so that they may carry out their assigned missions in an intelligent manner.

The third and subsequent paragraphs prescribe the administrative details for carrying out the action desired; the steps to be taken are presented in a logical or chronological sequence. Short sentences, clear and concise language, are employed. Limited dates for action are stated definitely and concisely.

The last paragraph includes rescissions and references to other publications.

Form

Heading. The usual heading for routine orders is used, appropriately modified to show the type of publication. Circulars and memorandums are numbered serially during a calendar year; usually no more than one is published on any day.

Body. A list of subjects covered by the various sections is placed at the beginning of the body. This list serves as an index to the publication. Each subject is placed in a separate section. Paragraphs within a section are numbered in accordance with current procedure.

REFERENCES

- AR 310-10 Military Publications--General Provisions.
- AR 310-50 Orders, Bulletins, Circulars, and Memoranda.
- AR 1-5 Army Regulations--Index.

HEADQUARTERS 46 BOMB GROUP (L)
COMMAN AFB, KENTUCKY

28 April 1949

DAILY BULLETIN
NUMBER 165

OFFICIAL

1. DETAILS FOR TOMORROW:
Lt W. F. Lowry
Lt A Nutt
Officer of the Day
Staff Duty Officer

2. CHANGES IN BUILDING AND TELEPHONE NUMBERS:
Capt Ernest P Mackinson.....Building 171....Ext 329

3. RETREAT PARADES:
There will be a Retreat Parade tomorrow, 29 April 1949, weather permitting.

4. SPEED LIMITS:
Vehicles will be limited to a speed of 15 miles per hour in all parts of the Base, except where lower speeds are posted by signs. Strict compliance with this speed limit will be enforced.

5. VOTING BY MEMBERS OF AIR FORCES:
The attention of all members of this command who maintain voting residence in the States of Colorado, Louisiana, Maine, and Nevada, or in the territories of Alaska and Hawaii is invited to Circular 221, WD, 1944, which includes information as to absentee voting State or territorial primaries and elections. The circular cited is available in all orderly rooms, and Unit Soldier Voting Officers will give any advice desired.

BY ORDER OF COLONEL NICHMAN:

OFFICIAL
W D PRESS
Capt, USAF
Adj

INFORMATION

BASE THEATRE: Exciting love story of a soldier, "THE EYE OF ST. MARK" starring Michael O'Shea-Lynn Baxter, PLUS News of the Day and Donald Duck in Commando Duck.

DJCG: Tonight at the Service Club, a dance for all enlisted personnel, from 2000 to 2330. Music by Base Orchestra.

Figure 5-27.--A Daily Bulletin.

WING HEADQUARTERS
TEXAS WING CIVIL AIR PATROL
Bldg. 1037 Hensley AF Base
Dallas, Texas

21 October 1949

MEMORANDUM
NUMBER 21

APPEARANCE OF CIVIL AIR PATROL PERSONNEL

1. Necessary steps will be taken at once by all concerned to insure the proper appearance of personnel of this command when participating in Civil Air Patrol activities.

2. Many cases of improper wearing of the uniform have been observed by personnel of this command during summer encampments and other Civil Air Patrol activities. This indicates a lack of pride of CAP personnel in their appearance which reflects upon the discipline and morale of the command.

3. a. Unit commanders will call the attention of all personnel of their command to the deficiencies described in paragraph 2, above, and be certain that all are thoroughly instructed in the requirements of uniform regulations.

b. Civil Air Patrol cadets departing on CAP activities will be required to report to the noncommissioned officer in charge who will inspect each individual and refuse permission for those individuals who are in improper uniform to participate in CAP activities.

c. CAP officers and senior members will stop individuals found in improper uniform or in improperly worn uniform and report the name and organization of the offender to this headquarters. In cases in which the dereliction is of a type that can be corrected on the spot, correction will be directed.

4. References: CAP Reg. 35-4 and CAP Reg. 35-4A.

BY ORDER OF COLONEL BLANK:

JOHN F. HEMLEHEAD
Major, CAP
Adjutant

OFFICIAL:
John F. Hemlehead
JOHN F. HEMLEHEAD
Major, CAP
Adjutant

Figure 5-28.--A Memorandum.

- AR 1-10 Army Regulations--List of Current and Suspended Pamphlets.
- AR 1-15 Army Regulations--General Provisions.
- AR 310-20 Military Publications--War Department Publications.
- AR 310-60 Military Publications.
- DA Memo 1-10-1 List of War Department and Department of the Army Memorandum.
- TM 12-253 Correspondence.
- TM 12-250 Administration.
- TM 12-252 The Army Clerk.
- TM 38-405 Distribution and Supply of War Department Publications and Blank Forms.
- TM 12-256 Orders, Bulletins, Circulars and Memoranda.
- TM 12-256A Order Digest.
- TM 20-205 Dictionary of United States Army Terms.
- AF Reg. 5-1 General Index to Air Force Standard Administrative Publications.
- AF Reg. 5-2 Numerical Index of AF Regulations, AF Letters and AF Manuals.
- AF Reg. 5-5 Department of the Air Force Publications.
- AF Letter 0-2.
- TO 00-1-1 Numerical Index of Technical Publications.
- FM 21-6 List and Index of Department of the Army Publications.
- FM 21-30 Conventional Signs and Abbreviations.
- CAP Reg. 5-3 Publications.

CORRESPONDENCE

Military correspondence is generally comprised of letters, endorsements, memorandums, and messages, great numbers of which circulate constantly within and between the various echelons of command. For these to be handled efficiently without confusion and misunderstanding, certain rules and customs as to style, contents, routing and filing must be observed. As these rules and customs are explained in this chapter, the sound, practical reasons behind them should be borne in mind, for military correspondence is, above all else, practical correspondence.

Because of the impersonal nature of military correspondence, every letter or indorsement will be judged solely on its face value.

SCOPE AND PURPOSE

This chapter presents in readily usable form the rules and customs in connection

with the preparation of correspondence, so that military personnel can be uniformly guided in handling the tremendous amount of paper work involved in managing and maintaining the military establishment. To do an efficient job in handling correspondence, procedures must be uniform. Certain things, such as style and preparation, routing, and filing, must be in accordance with a single plan and pattern; otherwise confusion and misunderstanding will result. There is nothing difficult about any of the procedures, although each requires considerable study and training. Each rule has a sound, practical reason behind it. The instructions in this chapter are general in application. They are not intended to cover all cases. When special problems arise, instructions must be obtained from the commanding officer.

Chain of Command

The concept of command is that every commander exercises authority through subordinate commanders to the lowest unit within his command. Every officer and enlisted man is under the command of someone. The private takes orders from a corporal, the sergeant from a lieutenant. This continues throughout all ranks. At the top of the pyramid, the commanding generals of the principal commands are responsible to the Chief of Staff, who in turn, is responsible to the Assistant Secretary of Defense for Air, who acts for the Secretary of Defense, who in turn, acts for the President, the Commander-in-Chief by authority of the Constitution.

CONSTRUCTION OF MILITARY LETTERS

Style

Military letters follow a fundamental style varying only in their details. Each military letter has the same three main elements as a civilian letter: heading, body, and close. However, none of these elements is put on paper in the same manner as in a civilian letter. Moreover, a military letter has no salutation or complimentary close. Each element of a military letter varies in its details, depending on the office in which it is written. The general style of a military letter is shown in the illustration.

Paper

Military letters are typed on paper 8x10-1/2 inches in size. Only one side of the sheet is used. Carbon copies are made on thin paper.

HEADQUARTERS
CONFIDENTIAL AIR COMMAND
Mitchel Air Force Base, New York

LST/r

OC

SUBJECT: Military (Subject-To) Letters

TO: Commanding General
Tenth Air Force
Fort Benjamin Harrison, Indiana

1. It is apparent at a glance that the typewritten matter on the first fold of this letter is properly spaced.
2. You will note that a margin of 3/4 inch has been left at the top of the paper, a margin of 1 1/4 inches at the left, and a margin of 3/4 inch at the right.
3. Also note that the paragraph numerals are indented 5 spaces and that the writing is single spaced within the paragraphs, with double spacing between all paragraphs, sub-paragraphs and sub-divisions.
4. Care in the following points will aid you in turning out good military letters:
 - a. Correct spelling. Nothing creates a more unfavorable impression on the recipient of correspondence than incorrect spelling.
 - b. Neatness. Special care should be devoted to the following points:
 - (1) Keep your type clean. Satisfactory work cannot be done if letters are clogged with lint and dirt.
 - (2) Avoid erasures and strike-over.

BY COMMAND OF LIEUTENANT GENERAL ROE:

4 Incls

1. Memo Form 82
2. Ltr SOO-3, Hq 10th AF
16 Mar 49 (in dup)
3. TM 12-283
4. Model ltr with 7 incls

LARUEL E. TRUNKOOD
Lt. Col, AGD
Adjutant General

1. a. Paragraphs, if more than one, are numbered consecutively. Sub-paragraphs or primary divisions of each paragraph are designated by the letters a, b, c, d, and so on.

(1) Subdivisions of primary divisions such as above are designated by numbers in parentheses (1), (2), (3), etc.

(a) Subdivisions of subdivisions are designated by letters in parentheses: (a), (b), (c), etc.

1. Additional subdivisions are indicated by underscored Arabic numerals, 1, 2, 3, etc.

2. Subparagraphing to this extent is avoided as far as practicable.

(b) The first line of subdivisions of subdivisions is indented as shown in this paragraph. All lines are blocked on the left margin, beginning two spaces to the right of the letter designation, (a), (b), (c), etc.

(2) Subdivisions are indented and margined in block style in the same manner as their subdivisions, shown in (b) above.

b. The first letter of a subparagraph is indented so that the designating letter appears directly under the first letter of the first word in the main paragraph. Second and succeeding lines of subparagraphs begin at the regular left margin.

2. The first line of a numbered paragraph is indented five spaces from the left margin. The second and succeeding lines begin at the left margin.

Figure 5-29.--A Military Letter.

Figure 5-30.--Subparagraph Arrangement.

Letterhead

Printed letterhead stationery is normally used for the first page. If letterhead stationery is not available, a typed letterhead may be substituted. Each headquarters has its own letterhead. In offices where more than one kind of letterhead is used, the nature of the letter will determine which letterhead is proper. The top of the letterhead is placed one inch below the top edge of the paper.

Copies

Copies are made in a quantity commensurate with the number of record-keeping headquarters through which the correspondence will pass, and the number of copies necessary for the maintenance of files at the activity, or headquarters initiating the correspondence.

Margins

The following blank spaces are left for margins:

Top of second and succeeding pages 1-1/4 inches (7 spaces down).

Left, 1-1/4 inches.

Right, 3/4 inch.

Bottom, 1-1/4 inches.

Position of Sheet

The heading, including the address, appears on the upper third of the sheet, so that when the sheet is folded, the address can be seen through the glassine window of an envelope. On a military letter addressed to a single addressee, about four black spaces between the last line of the inside address and the body of the letter are needed to meet this requirement. This rule of placement is followed even though a window envelope is not used. The body of the letter is placed on the lower two-thirds of the sheet, extending to one or more extra sheets if necessary. It is followed by the close.

HEADING

Components

All of the material above the first line of the body of the letter is termed the heading. The heading comprises office of origin and address, file references, identifying initials, date, subject, channels through which the letter is being sent.

File References

Identifying file references are placed at the left margin below the letterhead. These references vary according to the individual item of correspondence. Their use is not mandatory.

Initials

Some offices use the practice of placing initials of the dictator and the typist on letters. This practice varies because of the difference in size and functions of the various offices.

If the letter is to be signed by the person who dictates it, his initials, followed by the initials of the stenographer, are placed in the upper right corner. For example: DRA/gn

If the letter is not to be signed by the person who dictates it, initials are placed only on those copies which do not leave the office.

Date

The date of the letter is placed at the right of the page on the second line below the letterhead, and ends at the right margin. It is expressed by day, month, and year, in that order. The day and year are in numerals. The month may be spelled out or abbreviated. The year may be shortened to the last two digits.

Subject

Every military letter is assigned a subject, stated as briefly as possible--it should not exceed ten words--after the word "SUBJECT." In general, a letter refers to one subject only. The phrase describing it starts two typewriter spaces to the right of the colon. Title capitalization rules are used in the subject phrase.

Channels

When letters are routed through other than normal channels, the fact is stated two spaces below the subject. The following form is used:

SUBJECT: Application for Transfer.

THRU: Commanding Officer
Nevada Wing, Civil Air Patrol
State Building
Reno, Nevada

TO: Commanding General
Hq. & Hq. Sq., CAP--USAF
Bolling Air Force Base
Washington 25, D. C.

Address

Placement. The address is placed as in example above. It is written in block style, with open punctuation, and is placed directly under the subject.

Form. Official correspondence normally is addressed to the commanding officer or chief of a command or installation by his title.

TO: Commanding Officer
Utah Wing, Civil Air Patrol
423 State Capitol Building
Salt Lake City, Utah

TO: Commanding Officer
First Air Force
Fort Slocum, New York

The name of the commander or any other individual is avoided in addresses of military letters. Violation of this principle frequently causes delay in answering correspondence when the individual addressed is absent from his office. The only occasion upon which a military letter is addressed to an individual by name is when the communication pertains to him personally, and, on rare occasions, when it is positively known that the individual will be at his office on receipt of the letter and there is some special reason for addressing him personally. The same rule applies to the use of the word "ATTENTION" in the heading. Military letters are never addressed just to headquarters or offices.

Content

The address must be complete and accurate. However, Air Force rules concerning the protection of valuable information must not be violated. Location of overseas units, except those listed in Department of the Air Force circulars as unclassified headquarters, are never shown in the same piece of mail on which an APO number appears.

BODY

Definition

The body, or substance, of a letter is that part which is placed between the heading and the close of the letter.

Line Spacing

The body is single-spaced, with double-spacing between paragraphs. If a letter has

eight lines or less, however, it may be double-spaced.

Paragraphing, Numbering, and Subparagraphing

When a letter consists of only one paragraph, that paragraph is not numbered. When it is longer than a single paragraph, each paragraph is numbered in sequence. The outline in Figure 5-30 should be followed when subparagraphing exists.

Abbreviations

Abbreviations may be used in the body of a military letter if they are authorized by Air Force directives or are generally accepted.

References

When it is necessary to refer to military publications, the reference may include the paragraph number, section number, title, number, and date of publication.

Continuations, Dividing Material

A paragraph of three lines, or less, is not divided between pages. At least two lines of a divided paragraph should appear on each page. In dividing a sentence between pages, at least two words of the sentence should appear on each page. In no case is a word divided between two pages.

Identifying Information

Each page after the first page, is briefly identified by a typed legend beginning at the left margin, 1-1/4 inches from the top edge of the page. On a military letter, this identification consists of the office symbol, the file number, and if necessary, the subject. The letter is continued two spaces below the identification line.

Carry-over to Final Page

If the body of the letter is completed on the first or a succeeding page so near to the bottom that there is no room for the signature, at least two lines of the last paragraph are carried over to the last page--so that the signature will not become separated from the text.

Page Numbering

The first page is not numbered. Pages are numbered consecutively, beginning with the

Genl C ltr to C/S, USAF, OT 326.6, 16 Apr 46, "Development of the new AROTC Curriculum," continued

4. This recommended integration would not prevent the student from gaining an SSN. It is anticipated that students will receive an intensified specialized course in either Administration or Supply.

OC 312.2
SUBJECT: Military (Subject-To) Letters
Hq, 10th AF Ft Benjamin Harrison, Ind, 18 Dec 1948
TO: CO, 127th Pwr Sqdn (S.E.), Municipal Airport, Wichita, Kansas

1. This is a formal typed indorsement.

2. A paragraph of an indorsement may consist of one or more words and does not need to be a complete sentence.

BY COMMAND OF LIEUTENANT GENERAL ROE:

2 Impls
w/d 2 Impls-3 and 4

312.2
2nd Ind

Hq, 127th Pwr Sqdn (S.E.) Municipal Airport, Wichita, Kansas, 18 Dec 1948
TO: CO, Utility Flt, 127th Pwr Sqdn (S.E.), Municipal Airport, Wichita, Kansas

3 Impls
Added 1 Impl
S. Mae Form 77

LAUREL E. THURGOOD
Lt Col, AGO
Adj Gen

or

Hq, 127th Pwr Sqdn (S.E.) Municipal Airport, Wichita, Kansas

TO:

BY ORDER OF COLONEL BLANK

3 Impls
w/d 3 Impls

JOHN R. SMITH
Major, USAF
Adj

(If the following indorsement were a stamped indorsement it would be placed here. If it is a typed or sheet indorsement follow the usual spacing)

Figure 5-34.--Identifying Information.

Figure 5-32.--Illustration of Typed and Stamped Indorsements.

second page as 2. Numbers are Arabic and are centered an inch from the bottom of the page. The number stands by itself and is not set off by dashes, parentheses, or other punctuation.

CLOSE

The close always includes a signature and usually, a command line. If notations of inclosures or copies furnished are necessary, entry is made in this section.

Command Line

In military correspondence, the nearest equivalent of the complimentary close used in civilian practice is the command line. However, it has an additional function in that it is related to the concept of command which delegates authority. The following general rules govern the use of command lines:

1. When an officer signs for himself, no command line is used.

2. When a letter carries a statement such as "The Secretary of Defense for Air directs," or "The Commanding General desires," the command line is redundant and therefore omitted.

3. When an officer signs for someone else, the command line varies in accordance with the nature of the letter and the rank of the commander. To insure accuracy in preparing command lines, the clerk must be completely familiar with the place of his or her office in the organization of the Air Force. The following are examples of command lines.

a. For a general officer who has a command function (i.e., authority to command troops)--and addressed to a member of his command:

BY COMMAND OF MAJOR GENERAL DOE
--if not addressed to a member of his command:

FOR THE COMMANDING GENERAL

b. For an officer below the grade of brigadier general--if addressed to a member of his command:

BY ORDER OF COLONEL DOE

--if not addressed to a member of his command:

FOR THE COMMANDING OFFICER

c. For the head of a section of a staff who is addressing an individual in another part of the military establishment:

FOR THE JUDGE ADVOCATE GENERAL

4. A staff officer may sign under the command line "BY ORDER OF _____," or "BY COMMAND OF _____," only when authorized by his commander and when

the letter is addressed to an individual or headquarters under the command of that commander.

Signature

The signature includes:

1. The name of the officer (usually first name, middle initial, and last name), signed in ink or, when necessary, indelible pencil.

2. The name typed, stamped, or printed in capital letters identical with the written name.

3. The officer's grade, arm or service, and organization (unless he is on duty in The Adjutant General's Office, in which case they are omitted and "Adjutant General" is typed under his signature).

Placement. The typewritten portion of the signature begins approximately one space to the right of the center of the page five lines below the command line or body.

Form. Block style and open punctuation are used.

Facsimile Signatures. The use of facsimile signatures, which is optional, and generally authorized, does not alter the responsibility of the individual whose name is reproduced by such a method.

INDORSEMENT AND INCLOSURES

Definition

Indorsement is a method used to transmit or reply to a military communication by writing on the incoming communication itself rather than by preparing a new communication. An indorsement is concerned with the same subject as the letter to which it pertains. It is normally phrased in brief form--a simple statement rather than a lengthy consideration of the subject of the letter. Indorsements become an integral part of the communication and will not be withdrawn from the basic document to which they are appended. Indorsements are typed, stamped, checked, or initialed.

TYPED INDORSEMENTS

Copies and Numbering

Normally, an original and two copies of each indorsement are prepared. Beginning with the first, indorsements are numbered consecutively with Arabic numerals.

Components

An indorsement includes the heading, body, and close.

Heading

Elements of the heading are placed in the general manner and sequence indicated below.

1. File data of any necessary additional identifying matter.
2. Serial number of the indorsement.
3. The initials of the person dictating and the person typing the communication. These initials when used are placed either on all copies or on the file copies only, in accordance with instructions issued by the commanding officer.
4. Official designation and address of the headquarters or office from which the indorsement is being sent.
5. The date of the indorsement.
6. The suspense date, if one is needed.

Whenever an indorsement calls for an answer or report of action by a certain day, the date--called the "suspense date"--is placed above the initials. It is written thus:

1st Ind

S-1 Sep 43

EST/mm

7. The word "TO:" followed by the official designation and address of the person to whom the indorsement is being sent. This is separated from the typing above and below by two spaces.

Body

The body of an indorsement is prepared according to the same general rules that govern the preparation of the body of a letter.

Close

An indorsement is closed with a command line, if applicable, and a signature.

Spacing and Placement

Space permitting, the indorsement is written at the end of the basic letter. If space is insufficient to complete the indorsement on the basic letter, it is continued to an additional sheet. When the basic letter fills the first page, the indorsement is written on a separate sheet of plain bond paper. An indorsement is never written on the back of page. In preparing the indorsement the following principles are observed.

1. The first line (such as S-1 Sep 43) begins 1/2 inch below the written matter of the basic letter or previous indorsement.
2. The first line on a separate sheet begins 1-1/4 inches from the top of the sheet.

3. The designation and address of the headquarters begins at the left margin directly below the file data or other identifying information. When this phrase occupies more than one line, the second and succeeding lines are indented two spaces from the left margin.

4. The "TO:" phrase is placed on the second line below the headquarters line, beginning at the left margin. When the address takes up more than one line, the second and succeeding lines are indented two spaces from the left margin of the address.

5. The "command" line, if used, begins on the second line below the last paragraph of the indorsement, directly under the first letter of the first word of the preceding major paragraph.

6. The typewritten signature begins five lines below the command line or body unless lack of space prevents. The signature is not placed alone on a page.

7. Notation of inclosure begins at the left margin and on the same line as the first line of the typewritten signature.

STAMPED INDORSEMENTS

Form

It is often advantageous, especially in the field, to have the form of an indorsement set up on a rubber stamp so that the user need only fill in the spaces with appropriate information. The stamp has a rectangular border. It should not be larger than 1-1/2 by 3-1/2 inches.

The stamp is placed 1/2 inch below the lowest written matter on the page. Where two stamped indorsements are used, they are placed side by side.

CHECK OR INITIAL INDORSEMENTS

Check or initial indorsements are used to forward communications without comment. They are initialed by the individual who transmits the correspondence. They are numbered in sequence with other indorsements. Such expressions as "Referred," "Transmitted," "Forwarded," and "Returned" are not employed. An example of such an indorsement follows:

201 Arnold, Wilbur E. 1st Ind
 HQ, 50th Ftr Sq, Mitchel AFB, NY, 20Dec 43.
 TO: The Air Adjutant General, Washington
 25, D. C.

/s/ B.L.

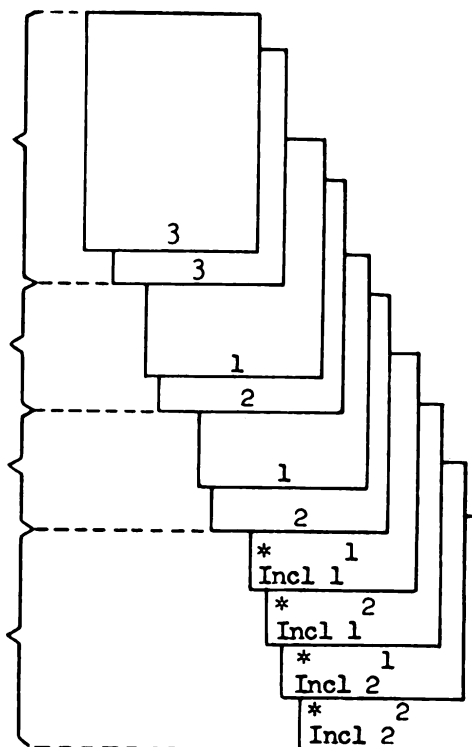
FOR SIGNATURE AND MAILING:

Last indorsement and carbon copy thereof (if more than one page, pages will be in numerical sequence).

Originals of basic letter and all indorsements except the last indorsement (pages in numerical sequence).

Carbon copies of basic letter and all indorsements except the last indorsement (pages in numerical sequence).

Inclosures and carbon copies thereof in numerical sequence.



FOR FILING:

Originals of basic letter and all indorsements (pages in numerical sequence).

Carbon copies of basic letter and all indorsements (pages in numerical sequence).

Inclosures and carbon copies thereof in numerical sequence.

Assumed - a basic letter with
 1st indorsement on one sheet
 2nd indorsement on second sheet
 3rd indorsement on third sheet and
 two inclosures (each in duplicate)
 *To be written in pencil

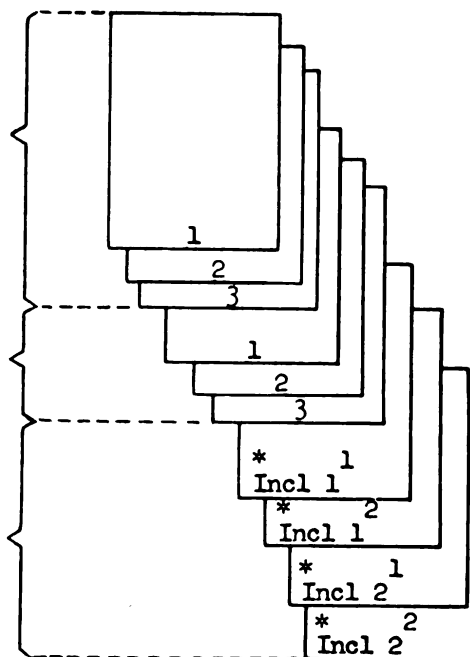


Figure 5-33.--Assembly of Correspondence for Mailing and Filing.

ASSEMBLING INDORSEMENTS

Outgoing Indorsement

Papers are arranged from top to bottom, and fastened with paper clips, in the following order:

1. Prepared indorsement.
2. Copy of prepared indorsement.
3. Basic letter (original copy).
4. Previous indorsements, if any, in numerical sequence (original copies).
5. Copies of the basic letter and previous indorsements in numerical order.
6. Inclosures in proper numerical sequence.

File Copy of Indorsement

Papers are arranged from top to bottom in the order listed:

1. Copies of basic letter.
2. Copies of indorsements in numerical order.
3. Copies of inclosures, if any.
4. Copies of memorandums or other supporting papers containing information desired as a matter of record.

Variations in Large Organizations

In large organizations where the indorsement is prepared in an office other than the one in which it is to be signed, the above order is varied by placing the file copy of the last indorsement on top of the papers prepared for file. The initials of the officer who prepared the indorsement and the intermediate approving officers are placed on this file copy. This arrangement facilitates verification by the officer signing the indorsement.

INCLOSURES

Inclosures are supplementary documents which are sent with communications to provide additional information.

Notation

When a letter has one or more inclosures, the fact is entered at the left side of the page in the following manner:

3 Incls:

1. DT fr. G-4, 4 Mar 44
2. Draft of Amdt to AR 340-15 (in dup)
3. AR 340-15, 5 Aug 44

The total number of inclosures is written on the same line as the first line of the typed

signature. Each inclosure is listed by number and is briefly described, making maximum use of authorized abbreviations. (Figure 3-2.)

Identification

The inclosure number is penciled in the lower left corner of the first page of an inclosure. Thus the notation may be erased when the inclosure is withdrawn for use with another communication. A copy of the original communication is not considered as inclosure. If an inclosure consists of more than one copy, an additional number is placed to the right and above the inclosure number to indicate whether it is the first, second, or other copy. For example:

ORIGINAL	DUPLICATE	TRIPLICATE
Incl 4	Incl 4	incl

When an inclosure is sent separately from the main correspondence, a copy of the basic letter or an explanatory notation on a separate sheet of paper is attached, and a notation such as "Under separate cover" is typed on the original communication.

Withdrawal or Addition of Inclosures

So that inclosures may be readily accounted for, each withdrawal or addition is noted at the bottom of the indorsement, by the office which removed or added it. Reference to an inclosure is made by number only. For example:

2 Incls

Withdrawn 2 incls--Incls 2 and 3

Added 1 Incl

4 Cy ltr fr Mun Bd 2 Mar 44

(In trip) with e inds. and 6 incls.

3 Incls

Dup copy Incl 2 w/d

If an indorsing office makes no change, the notation at the bottom of its indorsement reads:

3 Incls

No change (or n/c)

Copies Furnished Other Offices

The notation concerning copies furnished other offices is typed immediately under, and separated by at least one space from the notation of inclosures. It may take any clear

Addressee	Letter Address	Salutation and Close	Envelope address
The President	The President	Dear Mr. President Respectfully yours,	The President The White House Washington 25, D. C.
Secretary to the President	Honorable (full name) Secretary to the President The White House	Dear Mr. (surname): Sincerely yours,	Honorable (full name) Secretary to the President The White House Washington 25, D. C.
Members of the Cabinet	The Honorable The Secretary of State	Dear Mr. (Madam) Secretary:	The Honorable The Secretary of State The Department of State Washington 25, D. C.
Navy Department	The Honorable The Secretary of the Navy	Dear Mr. Secretary Sincerely yours,	The Honorable The Secretary of the Navy The Navy Department Washington 25, D. C.
Senator	Honorable (full name) United States Senate Washington, D. C.	Dear Senator (surname) Sincerely yours,	Honorable (full name) United States Senate Washington 25, D. C.
Committee Chairman House of Representatives	Honorable (full name) Chairman, Committee on (name) House of Representatives	Dear Mr. (surname) Sincerely yours,	Honorable (full name) Chairman, Committee on (name) House of Representatives Washington 25, D. C.
Representatives	Honorable (full name) House of Representatives Washington, D. C.	Dear Mr. (surname) Sincerely yours,	Honorable (full name) House of Representatives Washington 25, D. C.

Figure 5-34.--Examples of Addresses.

form. This information is omitted from original and courtesy copy when its inclusion is not considered desirable.

PREPARATION OF NONMILITARY LETTERS

Nonmilitary letters follow the same general style as civilian business letters, using a salutation and complimentary close and avoiding phraseology which is associated with the command function.

Nonmilitary letters are typed on paper 8 x 10-1/2 inches in size. Carbon copies are made on thin paper.

Printed or typed letterheads are used for nonmilitary letters in the same manner as for military communications.

Only one carbon copy usually is made. On instructions of the commanding officer or supervisor, additional copies are made when needed--as in the case of a letter to a member of Congress, with which a carbon copy must be inclosed.

Nonmilitary letters are usually sent in regular envelopes, should be neat in appearance but otherwise are typed without special regard to placement. Side margins are approximately equal, and at least one inch in width. When the letter is completed, it should have the appearance of a framed picture.

HEADING

The heading includes the letterhead, date, address, and salutation. File references are not necessary.

The initials of the person dictating the letter and those of the typist do not appear on the original. However, they do appear on all copies not transmitted with the letter.

The date is written as for a military letter. It is placed in the upper right-hand section of the page in such a position as to give a balanced appearance.

The address starts at the left margin and is spaced sufficiently below the line on which the date is placed so as to center the letter on the page. The name and title of the recipient, street address, city, and state are typed in block style.

BODY

The letter is double-spaced unless it will require more than one page, in which case it is single-spaced.

The body should be composed with unity and coherence in mind. It is divided into paragraphs according to the rules of good grammar. Numbered paragraphs and subparagraphing, however, are not employed.

Abbreviations are avoided.

References are used sparingly, and always are explained fully. No reference is made to a publication or document not available to the addressee.

The name of the addressee is placed on a line one and one-quarter inches from the top of the second, and succeeding pages, at the left margin. Rules concerning carry-over material are the same as for a military letter.

CLOSE

The close includes a complimentary line instead of the command line used in a military letter, the signature of the officer, and a notation concerning inclosures if any.

Signature. The officer's signature is typed in the same manner as on a military letter.

Notation of Inclosures. If there are inclosures, they are noted as on a military communication.

MISCELLANEOUS CORRESPONDENCE MESSAGES

Brief communications or those requiring expeditious action usually are handled as messages. In offices they ordinarily are prepared on a printed message form. In the field the Field Message Book is used.

Messages are classified or unclassified. Classification requirements are the same as those pertaining to other Air Force publications.

The provisions of AR 380-5 govern the preparation of classified messages.

Messages may be sent by radio, wire, messenger, or mail. Radio and wire services are limited to matters of vital importance which must be transmitted expeditiously. Messages are transmitted by air or regular mail if no more expeditious means are required.

Messages are assigned a precedence rating to indicate the relative order in which they will be transmitted and acted upon. These precedences are defined in AR 105-25.

Urgent

Operational Priority

Priority

Routine

Deferred

Types of messages are "single address," "book," and "multiple address."

DRAFTING THE MESSAGE

Brevity is stressed in preparation of messages. Words are eliminated wherever possible without making the message vague or ambiguous. The message must state exactly what it is meant to convey in order to avoid misinterpretation and further explanatory messages. Authorized abbreviations are used to the maximum practicable extent.

MESSAGEFORM

The following instructions deal with the messageform. (They also may be applied to a message prepared on a blank sheet of paper or to any other form used for preparation of messages, except the field message book which contains instructions for its use.)

Space Above for Signal Center Only

No entries are made in the space above this heading at the time the message is prepared.

From:

(Originator) In this block is entered the title and address of the commander or head of the office from which the message is being sent. The abbreviated form is never used when the message is addressed to an individual or agency outside the military or naval service.

Action To:

In this space is entered the official title (or name, if outside the military service) and address of each person who should take action on the message. When direct communication is authorized, the message is addressed to the person who is to take action. Authorized abbreviations are used when the message will be transmitted by a means of signal communication. When the message is to be sent by mail or commercial communication facilities, the address must be sufficient to insure delivery.

Action Addressees

Any number of action addressees may be entered, with one blank line between each. When the number of action addressees is such that the list will extend below the allocated space, the words "INFORMATION TO" are lined out. If information addressees are to follow, "INFORMATION TO" is retyped one blank line below the last action addressee.

Information To:

The official title (or name, if outside military service), and address of each person who should receive an information copy of the message is entered in this section in the same manner described for action addressees. Distribution of information copies, if any, within the originator's headquarters or office is not listed in this section. Local distribution is handled in accordance with local procedure.

Security Classification

"Unclassified" or "Uncl" is entered in this block when the message is unclassified.

DEPARTMENT OF THE AIR FORCE
In Reply Refer To: THE AIR ADJUTANT GENERAL'S OFFICE
WASHINGTON 25, D. C.

AOZ 312.2 18 April 1949

MEMORANDUM FOR THE CHIEF OF STAFF: US AIR FORCE

SUBJECT: Correspondence Manual

DISCUSSION

1. Technical Manual 12-253, "Correspondence," has been prepared to replace the detailed information now contained in AR 340-15, "Correspondence - How Conducted," and that contained in Technical Manual 12-252, "The Army Clerk."
2. It is designed for use by civilians in all some of the interior installations as well as by all military personnel.

ACTION RECOMMENDED

That this Manual be approved for adoption.

CONCURRENCES

CGUSAF {	Col John Doe, Management Control, 14 April 1949
CGUSA {	Col Richard Roe, Ground AG, 18 April 1949

A. B. Smith
A. B. SMITH
Major General
The Air Adjutant General

1 Incl
Draft TM 12-253

Figure 5-36.--Sample Memorandum.

MESSAGEFORM		MESSAGE CENTER NO. TRANSMITTING MEANS		CRYPTOGRAPHIC OR CLEAR TEXT	
CALLS	V	PRECEDENCE	TRANSMISSION INSTRUCTIONS	ORIGINATOR	DATE-TIME GROUP
ACTION		EXEMPT		OPERATING SIGNALS	
FROM: (Optional)		SPACES ABOVE FOR SIGNAL CENTER ONLY			
TO: HQ, HQ AND HQ SQ, CAP, USAF, ROLLING AFB, D. C.		SECURITY CLASSIFICATION			
ACTION TO:		UNCLASSIFIED			
* AF-CAP LIAISON OFFICER		ACTION PRECEDENCE FOR INFORMATION			
* MINNESOTA WING, CIVIL AIR PATROL		ROUTINE			
* 114 U. S. COURTS BLDG.		<input type="checkbox"/> ORIGINAL MESSAGE			
* MINNEAPOLIS 1, MINNESOTA		<input type="checkbox"/> REFER TO OTHER MESSAGE			
INFORMATION TO:		UNCLASSIFIED			
INFORMATION TO:		UNCLASSIFIED			
<p>REURAD ZEO THREE ONE SIX FOUR ZERO ZEEA</p> <p>CAP Message Center Identification Symbol</p> <p>941 BAYB HQ AND HQ SQ, CAP, USAF 96-C PD URGENT MESSAGES ARE GIVEN RIGHT OF WAY OVER ALL MESSAGES OF LOWER PRECEDENCE PD OPERATIONAL PRIORITY IS RESERVED FOR IMPORTANT MESSAGES PERTAINING DIRECTLY TO OPERATIONS EXCEPT ORDINARY MOVEMENT REPORTS WHICH CANNOT BE CLASSIFIED AS URGENT PD PRIORITY IS THE HIGHEST PRECEDENCE GIVEN ADMINISTRATIVE TRAFFIC WHICH CANNOT BE DESIGNATED URGENT OR OPERATIONAL PRIORITY PD ROUTINE SIGNIFIES NO SPECIAL PRECEDENCE PD DEFERRED IS FOR MESSAGES REQUIRING NO SPECIAL PRECEDENCE END</p> <p>CG, HQ AND HQ SQ, CAP, USAF</p>					
SECURITY CLASSIFICATION		AUTHORIZATION			
UNCLASSIFIED		<p>DATE-TIME GROUP</p> <p>17 MAR 1960</p> <p>11 168 1111 11-168</p> <p>This form separates WTD AGO Form 11-168, 18 Aug 44, and WTD AGO Form 11-168, 12 Mar 48, which are obsolete.</p>			
ORIGINATING AGENCY		<p>65/Maj. H. G. Rollins/Ext. 4420</p> <p>17 MAR 1960</p> <p>11 168 1111 11-168</p> <p>This form separates WTD AGO Form 11-168, 18 Aug 44, and WTD AGO Form 11-168, 12 Mar 48, which are obsolete.</p>			

Figure 5-35.--A Messageform.

Precedence For:

With due regard for circumstances and content, the lowest practicable precedence is assigned.

Action

In this block is entered the precedence which should be given the transmission to action addressees.

Information

In this block is entered the precedence which should be given the transmission to information addressees. A much lower precedence is normally given to information addressees than to action addressees. Frequently mail will suffice for information addressees.

Original Message

A check is placed in this block if the message being prepared is an original communication. A reply to a clear text communication received by mail is considered an original message.

Refers to Another Message

If the message being prepared replies or refers to a message transmitted by means of signal communication, the block labeled "IDENTIFICATION" and "CLASSIFICATION" is completed as follows:

Identification. The date-time group, or other message reference number of the previous message, is entered. This is expressed exactly as stated in the message to which the reply is being made except that the abbreviation of the month is added if different from the current month. The last two digits of the year may be added after the month if necessary.

Classification. The classification of the previous message is typed or stamped in. When the previous message was unclassified, the word "Unclassified" or "Uncl" is entered. If the message was classified, the reply must be classified accordingly.

References

References are used only when essential. Most common is the reference to a previous message, in which case office symbol, message reference number, or date group should be indicated. This information is placed one blank line below the last addressee or entry of book or multiple address. This line be-

gins ten spaces from the left margin and precedes the text.

Text

The text is typed in capital letters in block form beginning one space from the left margin and one blank line below the lowest entry in the upper section of the form. Double spacing is used.

Security Classification

The entry in this block is the same as that which appears at the top of the form.

Originating Agency

Either or both of the blocks below may be left blank. Their use depends on practices prescribed by the individual headquarters.

Where symbols of the office or section in which the message is prepared are not used, the title of the office may be placed in this block.

Authorization

The name, grade, and official title of the individual authorized to approve the message for transmission is typed or stamped in the "OFFICIAL TITLE" block. The individual signs his name in the block above the typed signature.

Page--of--

If more than one page is necessary, pages are numbered and the total number of pages is indicated. Example:

PAGE 1 OF 3 or
PAGE 3 OF 5

Page numbers are completed on all pages. Other blocks in the lower section of the message form are filled in on the last page only.

MEMORANDUMS

Memorandums are forms of communications often used in transmitting orders, establishing policy, and conveying comments, notations, or recommendations of action. Memorandums may contain studies or reports affecting orders or policies. The type of memorandum herein described is the form used for matters of importance and which become part of the permanent records of the military establishment.

The typed memorandum is normally used only within a headquarters, installation, or

small geographical area and is not designed for transmission by mail.

Heading

The date is typed or stamped under the normal letterhead as in the military letter. The title of the addressee and subject are started at the left margin, four lines below the date. For example:
MEMORANDUM FOR
SUBJECT:

Body

The body of the memorandum is prepared with the same spacing, margins and paragraphing as the military letter. Paragraphs are numbered consecutively within each section.

Memorandums which are prepared for submission to the Chief of Staff or higher authority are arranged in a definite order covering discussion, recommendation, and concurrences.

Close

The signature and command line are the same as for a military letter. A memorandum addressed to a higher authority normally is signed by the chief of the preparing agency.

ENVELOPES AND MAILING

Types of Envelopes

Penalty. The "penalty" envelopes, requiring no postage, are for official correspondence. They are not used for personal correspondence. Identifiable by the penalty clause printed where a postage stamp would normally be placed, these envelopes are obtainable in types and sizes ranging from ordinary address and window envelopes, to the large manilas.

Use of Envelopes

A self-addressed penalty envelope is not inclosed in correspondence addressed to a person outside the military or Government service when contractual relations with a business organization are concerned. Envelopes are not used for transmission of unclassified mail when the agency addressed is located within the same headquarters or building. The address on the face of the correspondence is sufficient for such transmission.

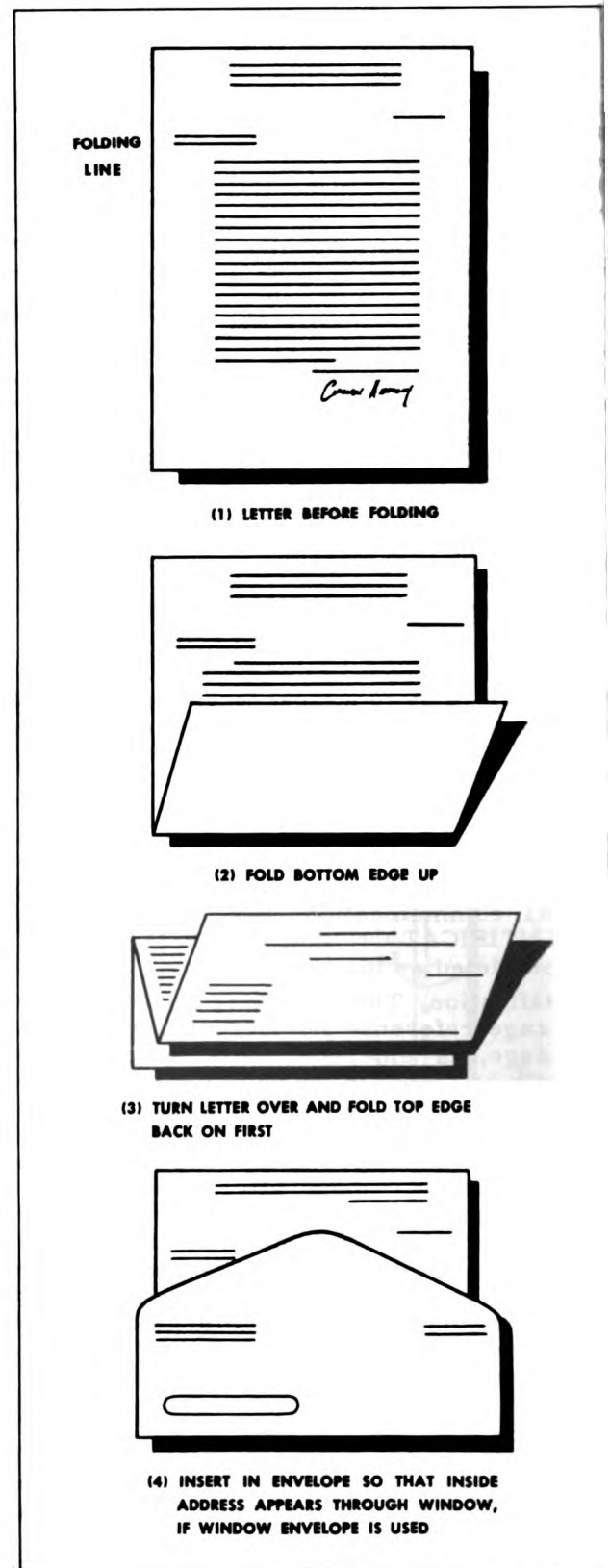


Figure 5-37.--Preparation of a Letter for Mailing.

Special Mailing

Registered Mail. All confidential or secret mail (other than that which is confined to a headquarters) is registered and dispatched in double envelopes. The classification of the correspondence is typed or stamped on the inside envelope and where necessary, a sheet of plain paper is wrapped around this envelope before it is placed in the outer envelope so that the classification designation will not be visible. "REGISTERED MAIL" is typed on the outer envelope. A return receipt is filled out in the office which is responsible for seeing that the mail is properly registered and dispatched. When a receipt is required for secret or confidential correspondence going outside a headquarters, WD AGO Form No. 996, Classified Document Receipt, is used. (All secret matter requires a receipt. This form also applies to confidential matter if the sender deems it necessary.)

Special Delivery. Outgoing correspondence requiring special delivery will have "SPECIAL DELIVERY" typed or stamped on the outer envelope.

Air Mail. Outgoing correspondence to be dispatched by air mail is typed on lightweight paper, and a lightweight envelope is used. The words "AIR MAIL" are typed or stamped on the outer envelope.

Time Stamp

Communications received by, or dispatched from, any office are stamped or noted with the name of the headquarters or office and the date. When practicable, the time of receipt is included. The stamp or note is placed on incoming communications on the reverse side of the page containing the last action. It is placed on the reverse side as near the top as practicable. This is because communications are normally fastened at the top of the written page. On outgoing correspondence, the stamp is placed on the reverse side of the original and on the file copy as near as possible to the top.

Folding and Fastening

Military and nonmilitary letters are generally folded into three equal parts when inserted into envelopes. The 8x10-1/2-inch letterhead when thus folded, fits evenly into a 4x9-inch envelope without crowding. The top third of the letter is folded toward the back of the letter, and the bottom third is folded forward over the face of the letter.

Folding the top third back permits the use of the window of which the address on the letter can be seen. Folding the bottom third forward over the body of the letter provides a certain degree of security, since by this method the text of the letter is covered and cannot be read without removal from the envelope.

A letter of more than one page, or one which contains inclosures, usually is fastened together with paper clips or a similar device when the correspondence is to remain within the military establishment. When it is to be forwarded outside the military establishment, metal fasteners should not be used since papers so fastened are frequently mutilated by the post office stamping machine.

CLASSIFIED INFORMATION

Certain military information must be carefully safeguarded to prevent it from falling into the hands of the enemy. Correspondence containing such information is "classified."

Types, or degrees, of classification, in their order from the lowest to the highest, are as follows:

The meaning of these terms and the basic requirements for the preparation, handling, and disposition of each type are described in AR 380-5. Everyone concerned with classified material must be thoroughly familiar with that regulation. The following applies to the above named Army Regulation, but is not a substitute for it.

Routine correspondence, receipts, or returns, and reports of possession, transfer, or destruction which make reference to classified documents (other than registered documents) need not be classified, providing they indicate the file number, date, and subject only (and not the classification) of the document cited. Extreme care, however, must be taken, that any mention of the subject does not convey classified information. If such a mention would convey classified information, a short title (where one has been assigned to the document) is used instead. Registered documents are referred to by register number, date, and short title only, with no indication of subject matter or classification.

The appropriate classification word is clearly printed or stamped (typing is used only when stamping or printing is not practicable) at the top and bottom of each page of classified correspondence. Classified books or pamphlets which have pages permanently and securely fastened together are marked with the appropriate classification designation on the cover, title page, and first page of the text.

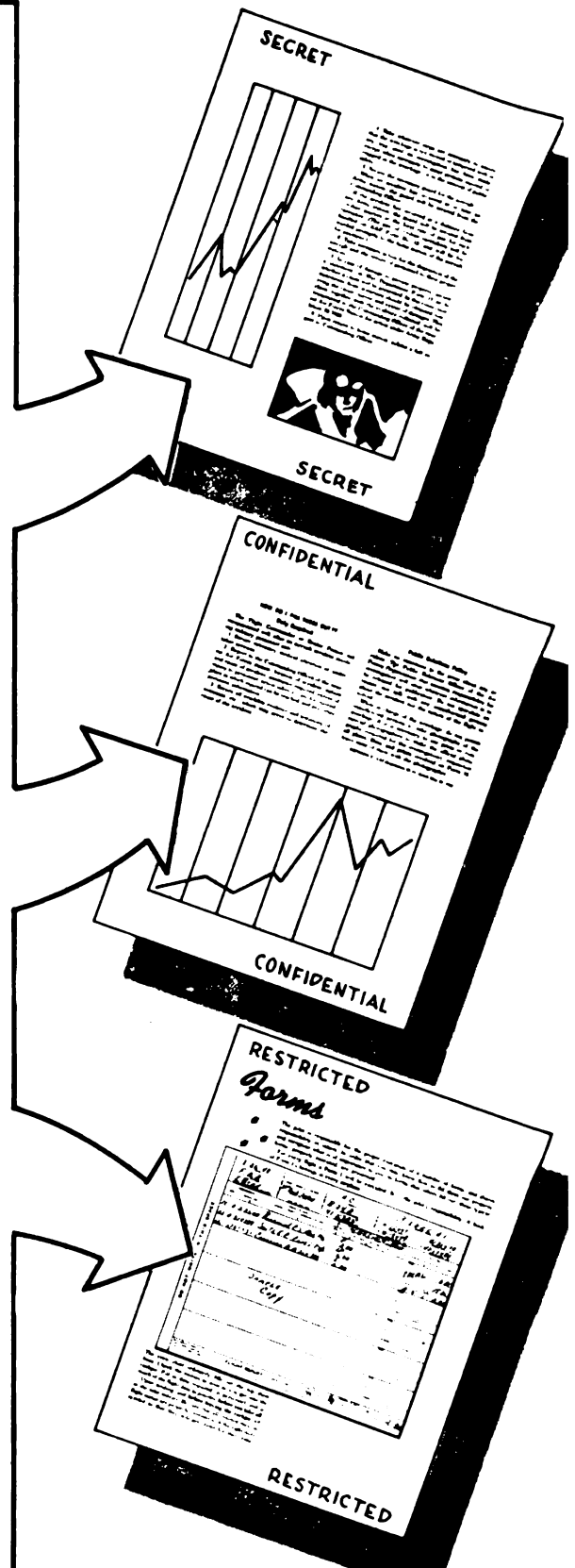
When military information is printed, written, or drawn, a word or words are stamped on it plainly to indicate how vital it is. There are 4 classifications for such documents. Top Secret, Secret, Confidential, and Restricted. Top Secret is rarely used.

A document is stamped **SECRET** (or Top Secret) if disclosure of its contents might threaten the security of the nation, injure its interest or prestige, or be of advantage to the enemy.

A document is stamped **CONFIDENTIAL** if disclosure of its contents might be of disadvantage to this nation and of help to its enemies.

The classification, **RESTRICTED**, is used on documents which are for official use only, or not for the public to see.

When you are privileged to handle documents marked Secret or Confidential, don't show them to anyone except the person to whom you are told to deliver them. If he is not immediately available, don't let the material leave your hands until it can be locked in a 3-way combination safe.



When communications are classified "TOP SECRET" or "SECRET," the authority is placed in the upper right section of the first page. This authorization statement includes the classification designation, the "authority" line, the date, and the initials of the officer making the classification.

All TOP SECRET, SECRET, and CONFIDENTIAL documents are kept in folders or binders, or are covered with an appropriate cover sheet, to conceal their contents. No notation is placed on the outer cover sheet or outer envelope to indicate the contents are classified. Papers of TOP SECRET, SECRET, and CONFIDENTIAL classification are kept in a locked safe when not in actual use. RESTRICTED documents are kept and handled in a manner which insures a reasonable degree of security.

If a paper marked "TOP SECRET," "SECRET," or "CONFIDENTIAL" is an inclosure to correspondence having a lower classification, the entire file is accorded to the higher classification.

Classified matters are not discussed in personal correspondence or with unauthorized persons. TOP SECRET and SECRET matters are not discussed over the telephone. When it is necessary to refer to CONFIDENTIAL or RESTRICTED matters in telephone conversations, words are used which do not reveal the subject matter.

Outgoing and incoming classified material is routed through the classified message center, where a record of such material is maintained. SECRET and CONFIDENTIAL material is transmitted between offices of a headquarters only by specially authorized messengers. TOP SECRET material is transmitted only by couriers specially designated to handle this type of material. TOP SECRET, SECRET, and CONFIDENTIAL matter received in an office is signed for by an authorized individual.

All classified waste is destroyed by burning or by an approved shredding machine. It is never thrown into a wastebasket. Classified waste is turned over to an appropriate office for destruction. Carbons are locked in safes or file cabinets until destroyed.

The authority making the original classification or higher classification may cancel or lower the classification by writing or stamping over the original classification the top of the first page.

ROUTING THROUGH CHANNELS

This heading refers to the routing of a communication through all intermediate com-

manders (and offices) who are expected to exercise control or to be concerned. Communications relating to the initiation of new policies and regulations or changes in existing policies and regulations, or those requiring decision or action affecting a command as a whole, will be routed through normal channels of command. Communications from a subordinate will go through channels unless specifically authorized to by-pass intermediate headquarters.

FILING

The Correspondence File

The correspondence file for use by squadrons and similar organizations and detachments (fixed and mobile), except machine records units, consists of ordinary 8-1/2 x 11-1/2 inch envelopes, with information placed thereon (by typewriter whenever possible). Each envelope will contain the original copy of incoming correspondence, the file copy of outgoing correspondence, inclosures and similar matter received and sent for the period indicated thereon. This system eliminates use of the correspondence book and document file by squadrons and greatly simplifies the filing of all papers.

All correspondence is numbered serially for each calendar year. The serial (file) number is to be plainly marked in the upper right corner of the first page of each separate communication. Correspondence is filed, unfolded, in numerical order. As each communication is numbered and filed, the corresponding file number on the outside of the envelope is underscored (ink or indelible pencil). Thus, the highest number underscored on the outside of the envelope will correspond with the highest communication filed therein. Additional envelopes are used as required, numbered serially for each calendar year.

An alphabetical index is maintained for ready references. This index is used for each calendar year and filed with the envelopes for the particular year.

An annual inspection is made of correspondence files by the commanding officer of the post, camp, or station, or an officer designated by him. At this time, the inspecting officer will eliminate all papers, etc., which have become obsolete or unnecessary for future reference. He will cross off and initial, on the outside of the envelope, all file numbers of the correspondence which have been eliminated. He will also cross off and initial the proper entries on the index. Papers or other documents relating to the history of the

organization and individuals or other records of future value are not to be removed.

Dewey Decimal Filing System

The science of filing involves the placing of papers in a file or other receptacle by use of a simple and economical method, so as to insure their preservation and availability when required, in whatever manner requested, within a minimum period of time. The basic principle of filing systems involves the provision of certain definite clues for locating the papers filed.

The Dewey Decimal System of Library Classification, devised by Mr. Melville Dewey, is the prescribed method of classification of USAF correspondence, and its use is mandatory. This system divides the subjects of knowledge into not more than 10 main classes, represented by the Arabic numerals 0 to 9, both inclusive. These 10 classes are each in turn subdivided into not more than 10 subclasses, and in turn the 100 subclasses thus created are each divided into not more than 10 divisions and so on. The numerals representing the 10 main classes are expressed in numbers of three digits, as 000, 100, 200, 300, and so on to 900. The first digit to the left represents a main class, the second digit represents a subclass of the main class, and the third digit a division of the subclass. After the subdivision of these numbers has been exhausted further subdivision of the divisions is effected by affixing additional digits to each number, separated therefrom by a decimal point. Therefore, each digit added to the right of a number represents a subdivision of the subject, represented by all the digits to the left.

The two most widely used symbols for filing are the Arabic (1, 2, 3, 4, etc.), and the alphabetical (a, b, c, d, etc.). The USAF Decimal File System is based upon the use of both Arabic and alphabetical symbols.

The combination of the subject clues, as given by the Arabic characters, with the name, or specific project clue, as given by the alphabetical characters described, provides for every contingency of record keeping. It is economical in operation, provides elasticity, and for highly specific subdivisions.

The Air Force decimal filing system, based on the Dewey Decimal System of Library Classification, divides all subjects of military communications into nine categories with a tenth which is reserved for special uses. These classes are numbered and titled as follows:

- Class 000 General
- Class 100 Finance and Accounting
- Class 200 Personnel
- Class 300 Administration
- Class 400 Supplies and Equipment
- Class 500 Transportation
- Class 600 Buildings and Grounds
- Class 700 Medicine, Hygiene, and Sanitation
- Class 800 Rivers and Harbors
- Class 900 (Special uses)

Each of the above is divided into ten sub classes. For example:

- 000 General
- 010 Laws and Legal Matter
- 020 Department of the Army
(powers, functions, etc.)
- 030 President and Congress of the United States
- 040 Executive Departments of the United States
- 050 Statistics
- 060 Maps, Charts, and Tables
- 070 Inventions
- 080 Societies and Associations
- 090 Local Affairs

Each of the ten subclasses is divided also into subdivisions; as,

- 020 Department of the Army
(powers, functions, jurisdiction administration)
- 021 Adjutant General's Office
- 022 Office Quartermaster General
- 023 Office Chief of Ordnance
- 024 Office Surgeon General
- 025 Office Chief of Engineers
- 026 Office Chief Signal Officer
- 027 Office Inspector General
- 028 Office Judge Advocate General
- 029 Miscellaneous

Further information concerning the Dewey Decimal System may be obtained by reference to "Department of the Army Decimal File System," U. S. Government Printing Office, Washington.

REFERENCES

- Department of the Army Decimal File System, Revised Edition.
- FM 21-30 Conventional Signs, Military Symbols, and Abbreviations.
- TM 12-252 The Army Clerk.
- TM 12-250 Administration.
- CAP Reg. 5-3 CAP Orders, Bulletins, and Memorandums.

CAP Reg. 5-2 Numerical Index of CAP Publications.

CAP Reg. 10-Series Correspondence.

RECORDS

A "shoestring" business can, and frequently does, operate without personnel records; not so with larger businesses. They know the necessity for complete and accurate records in order to make the net profit which is demanded. The same is true of military commanders charged with certain tasks or missions. In a businesslike employment of the men and materiel at their command such officers will be able to show a return.

The fundamentals of good personnel management, such as getting the right man for the right job, stimulating his will to work, and increasing his capacity to produce, depend in large measure on having complete and accurate information available on each man. Personnel records are designed to provide such information.

Applications for membership in CAP constitute the basic service record of all CAP personnel, both seniors and cadets. The assignment of any individual is based upon the information contained under such sections as those devoted to aviation data, auxiliary skills, employment experience, and hobbies.

CIVIL AIR PATROL

An Auxiliary of the United States Air Forces

The member named on the back of this card is voluntarily enlisted in the CIVIL AIR PATROL and is authorized to wear the uniform prescribed for CAP by the Department of the Air Force.

Armed Forces, Police and Civil Authorities are requested to cooperate with this member in the performance of his duties.

This card is Government property, and will be shown on demand.

Major General USAF
 National Commander

CAP Form 14-0

Not Valid Unless Stamped with CAP Seal

Unauthorized use is against Federal law.

Name _____

Date of Birth _____

Color Hair _____ Eyes _____

Height _____ Weight _____

CAP Serial Number _____

Signature _____

This Card Expires _____

If Found, Return to
National Headquarters, Civil Air Patrol
Bolling Air Force Base, Washington 25, D.C.

Civil Air Patrol Cadet

The Cadet Member named on the back of this card is voluntarily enlisted with the CIVIL AIR PATROL, an Auxiliary of the U. S. Air Forces, and is authorized to wear the uniform prescribed for C.A.P. Cadets by the Department of the Air Force.

Signature of Unit Commander _____

C.A.P. Rank _____ Date _____

Name of C.A.P. Unit _____

City _____ State _____

CAP FORM 91-6
Rev. 1 Nov. 47

This card will be shown on demand

This card is CIVIL AIR PATROL property

Photograph
Optional

Signature of Cadet _____

Name _____

Date of Birth _____

Color Eyes _____ Height _____

Color Hair _____ Weight _____

C.A.P. Serial No. _____

Address _____

Recommendations for appointments, promotions, or demotions, should be made on the proper forms (CAP Regulations, 35 Series) so that those records may become a permanent part of the member's 201 File at National Headquarters. Similarly records of training courses completed, aeronautical ratings, and all other pertinent information are reported on the forms prescribed by CAP Regulations, 50 Series. These records are initiated at the unit level.

A list of the recurring reports which must be made periodically to National Headquarters appears elsewhere in this text.

All CAP members should be familiar with the three basic Military Administrative Reports for these reports are used in their original form during all summer encampments. While some units have found it necessary to modify the forms slightly to fit CAP requirements the need for proper attendance and duty assignments records still exists.

The Morning Report provides information which reflects the status of the unit, its strength and the disposition of that strength. It is a historical record of the unit. In addition the Morning Report is a source of information for many other reports and statistical analyses.

AN AUXILIARY OF THE U. S. AIR FORCE		NATIONAL HEADQUARTERS CIVIL AIR PATROL Bolling Air Force Base Washington 20, D.C.		CAP FORM 12-0 REVISED 1 MAR 48	
APPLICATION FOR SENIOR MEMBERSHIP					
<p>READ CAREFULLY: Fill out two copies of this form on the typewriter and submit both. No carbon copies or written applications will be accepted. Fill all blanks. If answer is "no" or "none", so state.</p> <p>Make out the accompanying fingerprint card with a clear set of prints. Local police may help in this.</p> <p>Get three passport photos of yourself, full-face, without hat, and unsmiling, 1 1/4" x 1 1/4". Write your full name on back of each. Paste one in the space on page 3 of each of the two application blanks and attach the third.</p> <p>Give the above items, without folding, to the commander of the local CAP unit. His signature is required on both blanks. He will forward all these items, thru Wing Headquarters, to National Headquarters "Civil Air Patrol".</p>					
DO NOT WRITE ABOVE THIS LINE					
LAST NAME		FIRST NAME		SEX	RATING
MIDDLE NAME		CAP SERIAL NO., IF ANY		WING	SERIAL NO.
HOME ADDRESS (NO. & STREET)		CITY	STATE	PHONE	
BUSINESS ADDRESS (NO. & STREET)		CITY	STATE	PHONE	
EMPLOYER		RELATIONSHIP			
TITLE, IF ANY, IN PRESENT BUSINESS		MARRIED <input type="checkbox"/> SINGLE <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/> SEPARATED <input type="checkbox"/>			
NEXT OF KIN		DATE OF BIRTH (MONTH, DAY, YEAR)			
ADDRESS		PLACE OF BIRTH			
CITIZENSHIP		CITIZEN <input type="checkbox"/> NATURALIZED <input type="checkbox"/> NATURALIZED <input type="checkbox"/> CITIZEN <input type="checkbox"/> U.S. <input type="checkbox"/>			
OTHER (EXPLAIN)		NUMBER OF DEPENDENTS (CHILDREN UNDER 18 YEARS OF AGE) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>			
HAVE YOU EVER SERVED IN THE ARMED FORCES OF THE UNITED STATES OR ANY OTHER COUNTRY?		YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES FILL IN BELOW			
INCLUSIVE DATES		SERVICE	BRANCH	GRADE	NATURE OF DUTIES
ARE YOU NOW A MEMBER OF THE ARMED FORCES OR STATE GUARD ON ACTIVE OR RESERVE STATUS AND SUBJECT TO CALL FOR DUTY?		YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES EXPLAIN YOUR STATUS			
BRANCH CLASSIFICATION		ADDRESS AND NUMBER OF LOCAL BOARD			

Figure 5-38A.--Application for Senior Membership.

[illegible]

AVIATION DATA																									
NUMBER KNOWN AS PILOT (TOTAL BOLD)		TOTAL CROSS COUNTRY		NUMBER KNOWN AS PASSENGER OR OBSERVER																					
PILOT CERTIFICATE NUMBER		<input type="checkbox"/> YES	<input type="checkbox"/> NO	NUMBERS		CLERK																			
INSTRUMENT RATING		<input type="checkbox"/> YES	<input type="checkbox"/> NO	A & T RATING		INSTRUCTOR RATING		<input type="checkbox"/> YES	<input type="checkbox"/> NO																
CELESTIAL NAVIGATION		<input type="checkbox"/> YES	<input type="checkbox"/> NO	SCHOOL OF INSTRUCTION																					
HEIGHT FLYING EXPERIENCE		<input type="checkbox"/> YES	<input type="checkbox"/> NO	PILOT HOURS		AND NIGHT LANDINGS																			
GLIDER EXPERIENCE		<input type="checkbox"/> YES	<input type="checkbox"/> NO	HOURS		EXPLAIN																			
FLIGHT TIME ON DESK		<input type="checkbox"/> YES	<input type="checkbox"/> NO	HOURS		EXPLAIN																			
ON FIELDS FLYING DESK		<input type="checkbox"/> YES	<input type="checkbox"/> NO	HOURS		EXPLAIN																			
FLIGHT IN FOREIGN NATION		<input type="checkbox"/> YES	<input type="checkbox"/> NO	WHAT COUNTRIES																					
TYPE & PILOT IN W. S. OR OTHER ARMED FORCES		<input type="checkbox"/> YES	<input type="checkbox"/> NO	EXPLAIN																					
TYPE EMPLOYED IN AVIATION		<input type="checkbox"/> YES	<input type="checkbox"/> NO	STATION AND WHAT DUTIES																					
WITH SMALL TEAM AND YOU MUST FAMILIAR																									
AUXILIARY SKILLS (If other skills or specialties apply under Other skills and specialties categories.)																									
A & S MECHANIC		<input type="checkbox"/> YES	<input type="checkbox"/> NO	LICENSE NO		PARACOUT RIGGING		<input type="checkbox"/> YES	<input type="checkbox"/> NO																
RADIO TELEPHONE LICENSE		<input type="checkbox"/> YES	<input type="checkbox"/> NO	NUMBERS		CLASS																			
KNOW ADDRESS CODE		<input type="checkbox"/> YES	<input type="checkbox"/> NO	HOURS PER MONTH		EXPERT PHOTOGRAPHY		<input type="checkbox"/> YES	<input type="checkbox"/> NO																
AIRCRAFT																									
DO YOU OWN AN AIRCRAFT		<input type="checkbox"/> YES	<input type="checkbox"/> NO	LICENSE NO. IN		PLACE OF AIRCRAFT		MODEL																	
ENGINE AND H.P.				YEAR OF MFG		TOTAL HRP TIME HOURS		TOTAL ENGINE TIME																	
FLIGHT INSTRUMENTS		<input type="checkbox"/> YES	<input type="checkbox"/> NO	LIST BELOW																					
<table border="1"> <thead> <tr> <th colspan="2">AIRCRAFT RADIO TRANSMITTER</th> <th>TYPE</th> <th>MAKE</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> YES</td> <td><input type="checkbox"/> NO</td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">AIRCRAFT RADIO RECEIVER</th> <th>TYPE</th> <th>MAKE</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> YES</td> <td><input type="checkbox"/> NO</td> <td></td> <td></td> </tr> </tbody> </table>										AIRCRAFT RADIO TRANSMITTER		TYPE	MAKE	<input type="checkbox"/> YES	<input type="checkbox"/> NO			AIRCRAFT RADIO RECEIVER		TYPE	MAKE	<input type="checkbox"/> YES	<input type="checkbox"/> NO		
AIRCRAFT RADIO TRANSMITTER		TYPE	MAKE																						
<input type="checkbox"/> YES	<input type="checkbox"/> NO																								
AIRCRAFT RADIO RECEIVER		TYPE	MAKE																						
<input type="checkbox"/> YES	<input type="checkbox"/> NO																								
<div style="text-align: center;">PASTE PICTURE HERE</div> <div style="text-align: right;">(TOP OF PICTURE)</div>																									

Figure 5-388.--Application for Senior Membership.

WAP Form 91-1
REVISED 1 Feb 48

Civil Air Patrol Cadet

Application for Membership

Read carefully: Fill out two copies of this form. Fill all blanks. If answer is "no" or "none" so state.

Make out the accompanying fingerprint card with a clear set of prints. Local police may help in this.

Obtain three passport photos of yourself, full-face, without hat, and unsmiling, size 1½" x 1½". Write your full name on back of each. Paste one photo in the space allotted on page 2 of each of two application blanks and attach the third for use on the Identification Card.

Forward the above items, without folding, to the commander of the local CAP unit. His signature is required on both blanks. He will forward all these items to Wing Headquarters. Wing Headquarters will complete the applications by assigning a CAP Cadet serial number and issuing a Cadet Identification card. One copy of the completed application will be placed on file at Wing Headquarters. The duplicate application and FBI fingerprint card will be forwarded to National Headquarters.

Last name	First name	Middle name	Last name	First name	Middle name	Sex	Wing	CAPC serial number
Home Address			City	State	Former Cadet Serial number, if any			
Date of birth	Place of birth	Phone						
Height	Weight	Color	Hair	Color	Eyes	Scars if any	Glasses (reason)	
Nationality			Parents extraction or nationality United States Citizen					
Father	Mother							
EDUCATION Circle the highest grade completed in elementary or high school. 1 2 3 4 5 6 7 8 9 10 11 12 Did you Graduate Yes No GRADUATE Yes No								
NAME AND LOCATION OF SCHOOL From To Yes No								
Present occupation (Student or other) Yes No								
Have you ever served in the Armed Forces of the United States or any other country Yes No? If YES fill in below: INCLUSIVE DATES SERVICE BRANCH GRADE NATURE OF DUTIES								
Are you a member of the Air Force Enlisted Reserve Yes No?								

Figure 5-39.--Application for Cadet Membership.

RESIDENCES FOR PAST FIVE YEARS

Street	City	State	Date

Give following information about at least three individuals who know you well and are competent to judge your character, loyalty, and ability.

Name	Address	Occupation

OATH: I pledge that I will serve faithfully in the CAP Cadets, attend all drills and classes, obey my superiors, wear my uniform in a military manner, and advance my training rapidly so that I may prepare to be of service to my community, state and nation.

Full name of parent or guardian _____ Signature of applicant _____

CONSENT: I hereby consent to the service of the applicant in the CAP Cadets. I (consent)(do not consent) to the applicant accepting opportunities to fly in airplanes operated under supervision of Civil Air Patrol.

Relationship to applicant	Date	Signature of parent or guardian

Name of CAP unit commander	CAP serial number	CAP Grade

Name of CAP unit	Signature of Unit Commander

CAPC identification card issued	Date	CAPC serial number assigned

Aviation Data (if any)

REMARKS:

Place photo here

- What are they?
- What do they contain?
- How are they used?
- Why are they necessary?

The Present and Absent Division of the strength section shows the disposition of the assigned and attached strength and, again by rank, the number present for duty is listed. Those not present for duty are listed in the absent column according to rank and in the category which best describes their status, such as sick, leave, TD or DS, confined, AWOL and missing.

Figure 5-40. --Morning Report.

The Daily Sick Report is a permanent record of individuals who required medical attention while serving with the Air Force or attending a CAP encampment. It records the dates of treatment, the line of duty status and the disposition of each individual treated. The information contained in this record is

ORGANIZATION OR DETACHMENT COMMANDER'S REPORT						MEDICAL OFFICER'S REPORT			
DATE 1950	LAST NAME—FIRST NAME—MIDDLE INITIAL	ARMY SERIAL No.	GRADE	WHEN TAKEN SICK	IN LINE OF DUTY (Yes or No)	IN LINE OF DUTY (Yes or No)	IMMEDIATE DISPOSITION	FINAL DISPOSITION	
30 June	Richardson, John F	38465529	Sgt	30 June	Yes	Yes	Dy		
	Moore, Thomas R	27614235	Pvt	30 June	Yes	Yes	QRS	20 July Dy SBR	
	Finley, Jack J	21753421	Cpl	30 June	Yes	Yes	Hosp	15 July Dy SBR	
	Rhodes, Dust D	86954233	Pfc	30 June	NO AR 35-46	NO AR 35-46	Hosp		
	William H. Hamburg		Major						
1 July	Smith, John J	2169873	Pvt	1 July	Yes				

(See AR 345-415)

W. D., G. O. Form No. 5 e16-32978-1
May 1, 1924

No.	RANK	NAME	NATURE OF DUTY AND WHEN LAST PERFORMED		
			Charge of Quarters and Room Orderly	Fatigue	Kitchen Police
1	Sgt	Riley	Aug 25, 6	Sept 20	Sept 5
2	Corpl	Foot	Sept 25	Sept 10, 28	Sept 14, 29
3	Pfc	Ewing	Aug 28, 9	Aug 30, 4	Sept 1, 21
4	Pvt	Thomson	14	15	18
5	Pvt	Rogers	Aug 31, 13	Sept 15, 21	Sept 21

W. D., G. O. Form No. 6 e16-33048-1
February 1, 1943

For The Month of October																															No.	
GUARD ROSTER																																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
5	1	2	3	4	SK	SK	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5										1
7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5							2
3	4	Ed	Ed	Ed	Ed	Ed	Ed	Ed	Ed	Ed	Ed	5	6	7	8	9	1	2	3	4	5											3
1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5										4
F	F	F	F	F	F	F	F	7	8	9	1	2	3	4	5	6	7	8	9													5

e16-33048-1

Figure 5-41.--Sick Book, and Duty and Guard Roster.

HEADQUARTERS AND HEADQUARTERS SQUADRON
CIVIL AIR PATROL - UNITED STATES AIR FORCE
Bolling Air Force Base, Washington 25, D. C.

TITLE OF REPORT	AUTHORITY	REPORTING PERIOD AND DUE DATE
1. Monthly Statistical Report	Letter this Headquarters, subject "Monthly Statistical Report", dated 23 February 1950.	All States - 1st to 31st of same month.
2. Movement of High Government Officials in Military Aircraft	AF Regulation 76-11, CAP Regulation 76-2	Monthly. Positive reports due this Headquarters eighth working day of month. Negative reports to be included in par 10 of Monthly Statistical Reports.
3. Search and Rescue Facilities	Par 11, CAP Regulation 55-10 dated 9 December 1948	Monthly report to reach this Headquarters no later than the 15th day of the following month.
4. Roster of Inactive Senior Members	Par 2, CAP Regulation 35-2A	Monthly. As of 2400 hours the last day of each month. To arrive this Headquarters not later than the 15th day of the following month. Negative reports WILL be submitted.
5. Activation and Deactivation of units.	Par 10b, CAP Regulation 35-5	Monthly, 8th working day of each month. Negative reports will NOT be submitted.
6. Change in Unit Command	Par 10a, CAP Regulation 35-5	Immediately after change takes place.
7. Personnel Roster by Units	Par 10, CAP Regulation 35-5	As of 2400 hours 31 May and 2400 hours 30 November of each year. As soon after the last day of reporting period as possible.
8. Cadet Strength Report	Par 6, CAP Regulation 30-3	Upon request.
9. Daily Report of Selected AF Aircraft, Operations (AF Form 110A)	AF Regulation 15-1 and CAP Regulation 15-1.	Monthly. Report due the third working day of each month.
10. Monthly Aircraft Inventory and Flying Time Report (CAP Form 1)	CAP Regulation 15-1	Monthly. Report due the sixth working day of each month.
11. Air Force Aircraft Gained or Lost During Past 24 Hours (AF Form 110B)	AF Regulation 15-1 and CAP Regulation 15-1	Each 24 hours of flying time, or when an aircraft is lost to or gained from an AFB for maintenance purposes, or transferred to or received from AFB. Report to be postmarked or sent via wire within 24 hours after gain or loss.
12. Commercial Communications Service Report	Letter, this Headquarters, dated 10 September 1948, subject: "Commercial Communications Service"	Monthly. Report due this Headquarters eighth working day of the month.
13. Itineraries and Landing Lists of Aircraft Assigned to Liaison Officer.	Par 6, Weekly Bulletin No. 25, 15 July 1949	Quarterly report to reach this Headquarters not later than the 15th day of April, July, October, and January.
14. Semi-annual Inventory of Stock Record Account.	Par 133, Sec XIV, AF Manual 67-1	1 January through 30 June, due 15 July. 1 July through 31 December due 15 January.
15. Semi-annual Inventory of Wing Supply Account	Letter, this Headquarters, subject "Inventory of Wing Supply Accounts" dated 3 January 1949	1 January through 30 June, due 15 July. 1 July through 31 December due 15 January.
16. Condition Report on L-type aircraft on Loan to Civil Air Patrol (Reports to be filed in AF-CAP Liaison Office)	CAP Regulation 65-33	At least once each ninety (90) days.
17. Flying Time Report (Report to: Aero Insurance Agency, 908 Tower Bldg., Washington 5, D. C.)	L-4 Aircraft Insurance Policy	Quarterly on the 18th day of March, June, September and December.
18. Accident Report. (Report to: Aero Insurance Agency, 908 Tower Bldg., Washington 5, D. C.)	L-4 Aircraft Insurance Policy	Immediately following an accident of an L-4 aircraft involving any personal injury or property damage (property damage other than the L-4 aircraft).
19. Insurance Premium on CAP owned and registered aircraft (PT-13, L-4's and others). (Report to: Aero Insurance Agency, Washington, D. C. or other appropriate insurance agency).	Par 1d, letter, this Headquarters, subject: "PT-13 Aircraft" dated 16 March 1949 (PT-13's) Par 3 letter, this Headquarters, subject: "L-4 Aircraft, Surplus", dated 19 September 1949 (L-4's)	Annually or as arranged with insurance company.
20. Insurance Premium for CAP owned vehicles. (Report to: American Casualty Co., Reading, Pa., or other appropriate insurance agency).	Par 18, CAP Regulation 77-1	Normally every three months or as arranged with insurance company.
21. Financial Report	Par 4, CAP Regulation 173-1	A statement of the wing financial status will be submitted to this Headquarters annually. In addition, whenever there is a change of Wing Commanders, a wing financial statement will be submitted to this Headquarters as of the date of transfer.

of vital importance both to the individual and the government. It is required by the organization commander, the medical officer, the personnel officer, and the finance officer.

Entries in Daily Sick Report. Usually when an individual requires medical attention, his name and other required information will be entered in the Sick Report prior to reporting on sick call. In an emergency when immediate medical attention is required, the individual will receive medical attention first, and as soon as practicable thereafter the unit commander will cause the name of the individual to be entered in the report. The information contained in the Sick Report is the basis for many entries in the Morning Report (number sick), service records, payrolls, etc. It also can be used to aid in analyzing the state of a unit. It complements the Morning Report. The Morning Report of a certain day tells you the over-all number that are sick. The Daily Sick Reports will give you an indication of the circumstances surrounding these cases. Like the Morning Report the Daily Sick Report is a tool of the officer manager and fills a need for information necessary to formulate sound decisions.

THE DUTY ROSTER

We now come to the third and final record to be discussed in this chapter, the Duty Roster. The Duty Roster, if correctly maintained, provides information by which the officer executive can insure an equitable distribution of the special and housekeeping duties, and so prevent situations which would be detrimental to morale. Many of you can no doubt recall situations where some individuals have been charged with a greater portion of extra and special duties normally found in an organization. When such situations occur, the individuals get "bitter," that is, their morale suffers. Some of this might have been caused by the improper or inaccurate use of a Duty Roster.

The Duty Roster, in addition to being an assurance to all men that they are not getting more than their fair share of special duties, is a tool for the manager. It tells him where he is losing man hours that are not directly contributing to the accomplishment of his mission. The Duty Rosters will indicate the frequency of the incidental duties which take the soldier from his primary duty. We can say that the Duty Roster is another two-edged tool; it is a schedule and a record. It tells what will take place and what has happened.

There are two types of Duty Roster--the general and specific type. A good example

of each is the Duty Roster and the Guard Roster. The principle of both is identical. They both are designed to accomplish the same objective, an equitable distribution of special duties. The Duty Roster is designed to cover a variety of special duties and the Guard Roster is designed to cover a specific special duty. Regulations require a definite form for these two purposes for an obvious reason--to force complete coverage of the basic principle.

In this discussion of personnel records and basic administrative reports, our concern has been with a general picture of these additional tools available to the commander and his staff. Such tools are invaluable in selecting training, and assigning men. They help get the right men for the right job. In addition they provide information needed by the commander in handling other personnel problems and in making plans for his organization. Only as such records present complete and accurately the desired information do they achieve utility and justify the expense of maintaining them. Only as they are properly used do they have proper effect in conserving manpower. These records are not a panacea or cure-all for the commander's personnel problems but can be worthwhile aids in solving such problems. They assist but will never replace wise and fair leadership. If understood and properly used by all officers, they will enable commanders to discharge their obligation in obtaining the maximum product from their organizations.

REFERENCES

- TM-35-1 Personnel classification and duty assignment.
- TM 12-230A Service Records.
- AF Manual 35-0-1 Classification Manual.
- AR 345-5 Personnel Records.
- AR 345-400 Morning Report.
- AR 345-25 Duty Roster.
- CAP Reg. 35-Series Personnel.
- CAP Reg. 15-Series Blank Forms and Reports.
- CAP Reg. 14-Series Boards and Committees.

FINANCES

Fund Raising. All Civil Air Patrol wings are free to raise necessary funds through the medium of air shows, raffles, dances, and other ventures, which may be of a local or statewide nature. Each wing is responsible for controls which will avoid any conflict or duplication of dates or events. Other sources of funds are appropriations from state or

Custodians. Wing, group, squadron and flight commanders have been designated as custodians of their respective unit funds. Each is assisted by a fund council composed of two other officers from their own organizations. The purpose of the council is to provide a means of assisting the unit commander in budgeting and spending funds. The council may be held responsible if they approve an unauthorized expenditure. If unit

fund property is subjected to misuse, the custodian is responsible. Since the unit commander is the custodian of public and private funds, it is only natural to expect that his conduct along financial lines be above reproach. Certainly caution should be exercised when administering these funds, and personal funds should never be mingled with them. If a new commander is appointed, or the present one contemplates being absent for an extended period, the new or acting commander assumes full responsibility of all the funds and property. On being appointed custodian, it is advisable to request and get a complete audit of the fund. The new custodian should make a personal physical inventory of all property that is part of the fund,

IN ACCOUNT WITH Unit		FUND, Lafayette Sq., Lafayette, Louisiana								
Year	1950		Ration Savings				Other Funds			
Month	Nov		Receipts		Expenditures		Receipts		Expenditures	
Voucher	Date	Balance from last month					137	00		
1	1	Pool Table Receipts					69	50		
2	1	Commission to Day Room Orderly							13	90
3	3	Petty Cash Fund					15	00	15	00
4	15	Dividend, Post Trust Fund, October					178	00		
5	16	123rd Recon. Sq. 70th Gp. Radio					37	50		
6	20	J. C. Adams Furniture Co. (Furniture)							114	25
7	23	Day Jewelry Co. (Prizes)							18	50
8	30	Reimburse Petty Cash Fund							3	00
Total receipts and expenditures							437	00	164	65
Balance carried forward									272	35
Totals							437	00	437	00

Figure 5-42.--A Single-Entry Account Page.

Solution of Problem		Vo No 7	
		Date 6 March 1960	
VOUCHER			
Unit Fund, Lafayette Sq., Lafayette, Louisiana			
(Name of Fund)			
Date	Description	Amount	
		Received	Paid
23 Nov 46	Day Jewelry Co (Prizes) Attached Bill of Sale from Day Jewelry Company bearing a certificate comparable to the following "I certify that the above account is just and correct and that payment has not been previously received." (S) L. B. Robins Clerk		18 50
TOTAL			18 50
Less discount			
NET			18 50
I certify that the above account is correct and that--			
a The goods or services paid for by check No _____ were actually received			
b The amount received was due and authorized and was received by cash- check (Strike out whichever does not apply)			
(Strike out a or b, whichever does not apply)			
(S) E. E. Chaplin Captain, CAP Custodian			

Figure 5-43.--A Voucher.

to see not only that the property is there but that it is being used in an authorized manner. He should assure himself that property purchased for the day room has not been removed to some individual's quarters.

Accounting Procedures. The following is a brief explanation of unit fund administration, with a description of some of the accepted accounting procedures.

A simple single entry bookkeeping system is used to account for unit funds. In handling

unit funds, custodians avail themselves of local banking facilities. The custodians should use a checking account to insure that this additional control is placed on the fund. All permanent property that is purchased with unit funds will be recorded in the council book (Quartermaster Form 15). This record shows the purchase price and also a description of the property. If property is lost or worn out, the information is indicated under "disposition" and a voucher signed by all members of the fund council to support the entry in the property section of the council book. All expenditures, both from the petty cash fund and the checking account, are supported by vouchers. These vouchers, in turn are supported by certificates, receipts, or other accounting instruments which are designed to substantiate all transactions. If there is any doubt as to whether or not an expenditure is authorized, the air inspector or budget and fiscal officer should be consulted for advice.

The unit fund may be audited and inspected at any time. Regulations require that these funds be audited and inspected periodically. It is the practice of the wings to have these accounts audited and inspected monthly. The voucher register is closed at the end of each month or whenever a custodian is replaced. An audit sheet and financial statement is accomplished by the custodian and approved or disapproved by the members of the council. A statement of the financial status of the wing is submitted to national headquarters annually or whenever there is a change of wing commanders.

REFERENCES

Army Reg. 210-50.
CAP Reg. 173 Series Finance--Unit Funds.

A-2--INTELLIGENCE

All other things being equal, the side which possesses the most information about the enemy--his strength, disposition, capabilities--will win the battle, or the war. That information, evaluated and interpreted, is called intelligence.

The Civil Air Patrol in peacetime has no intelligence function, although a staff section, A-2, is provided in the organization charts and would begin to function immediately in the event of an emergency. It is necessary, therefore, that the CAP members know something about the subject, academic though it may seem.

Definitions. There are many different types of intelligence. Broadly speaking, we are interested in two main types:

1. Military Intelligence. Evaluated and interpreted information concerning a possible or an actual enemy, or a theater of operations, including terrain and weather, together with conclusions drawn from that information.

2. Air Intelligence. That part of military intelligence required for employing air power most effectively.

Purpose. The purpose of air intelligence is to provide commanders with the many types

of evaluated and interpreted information necessary for planning and conducting all kinds of air operations.

How collected. The gathering of intelligence is not exclusively the job of the "cloak and dagger" boys--the daring secret agents who operate behind the enemy lines and who, at least in fiction, associate only with high enemy brass and their beautiful wives and lady friends. There are such agents, who turn up much valuable information, but generally speaking, the gathering of intelligence is a much more prosaic task. It means reading enemy newspapers and magazines, listening to radio broadcasts, and poring through technical journals, maps, etc. These are some of the sources of intelligence:

1. Civilian sources.
 - a. Government agencies, such as the State Department, Library of Congress, Treasury Department, Department of Commerce, etc.
 - b. Quasi-official agencies, like the Pan-American Union, etc.
 - c. Private agencies, as the National Geographic Society, museums which sponsor field expeditions, missionary societies, and the like.
 - d. Enemy publications. Newspapers and magazines (particularly technical journals) frequently provide valuable information about the enemy, as do enemy radio broadcasts.
 - e. Individuals. Interviews with explorers like Roy Chapman Andrews, and world travelers, provide much information about little-known places which might be the scenes of military operations. During World War II, intelligence officers interviewed everyone they could find who had visited the Axis countries before the war, and thus uncovered many maps, publications, and other valuable sources of information.

2. Military sources.
 - a. Aerial observation and photographs.
 - b. Combat: learning the enemy's disposition and strength in a given area by fighting him there, or with patrols.
 - c. Prisoners-of-war, and captured equipment and documents.
 - d. Secret agents.
 - e. Underground forces in enemy territory.

Duties of the intelligence officer. In addition to the collection, evaluation and interpretation of information for military purposes, the intelligence officer also serves in the field as his unit censor, to prevent the

inadvertent transmission of information which might be of value to the enemy in personal correspondence. In addition, he has some public information function, and works in close cooperation with the public information officer, whose duties will be considered elsewhere in this section.

Counter-intelligence. It is just as important to prevent the enemy from gathering information about us as it is to obtain data concerning his war potential. One of the most vital functions of the intelligence section, therefore, is counter-intelligence. The counter-intelligence officer is responsible for the preparation and supervision of a security plan for his unit. He is usually an officer particularly trained for the work, and is well versed in counter-espionage, counter-sabotage, secrecy, and deceptive measures. He is also responsible for guarding all documents, material, and installations, and all preventive and investigative measures necessary to maintain the security of his unit.

The Intelligence Structure

1. National. Before and during the early part of World War II, dozens of different agencies each maintained their own intelligence units, many with duplicating functions. Coordination of their efforts was far from adequate. The present intelligence structure was created in 1946 to integrate the efforts of all such agencies and eliminate overlapping functions. While the Army, Navy and Air Force all have their own intelligence agencies, the efforts of those agencies are coordinated at the working level. A Joint Intelligence Committee, which operates under the Joint Chiefs of Staff. The JCS report directly to the President, as do the Central Intelligence Agency of the National Security Council, and the State Department's special intelligence organization.

2. Air Force. Within Headquarters, USAF, the Director of Intelligence functions under the Deputy Chief of Staff, with an organization consisting of three main divisions: air intelligence, policy, and requirements. He is charged with the broad mission of directing, supervising and controlling all USAF intelligence activities.

REFERENCE

CAP Reg. 200 Series Intelligence.

A-3--OPERATIONS AND TRAINING

During peacetime, operations and training in the Civil Air Patrol are more or less overlapping functions, since all CAP missions,

while they are an end in themselves, are designed to fit air and ground crews, communications specialists, and other personnel for

larger tasks in the event of a national emergency.

Thus, while the immediate object of a search and rescue mission is the finding of the crashed plane or lost hunter, those engaged in that mission also are undergoing practical training for such war-time tasks as coastal patrol, anti-sabotage patrol, aerial surveillance of pipelines, bridges, and other vital facilities, or for exactly similar missions: search and rescue.

In general, however, there is a definite line of demarcation. CAP training is designed to equip all personnel with the knowledge and skills which will enable them to carry out the assigned missions. An operation is merely the application and coordination of those skills to bring about a desired result: the spotting of a submarine, the capture of a saboteur, the successful completion of a tow target and tracking mission.

TRAINING

Training is the most important single job of the Civil Air Patrol in peacetime, not only for present activities but also for the future. For in a war, if one should come, the CAP not only must constitute an effective light-plane airforce, ready immediately to take up its assigned part in the defense of the country, but it must be capable also of expanding rapidly. Which means that every individual now a member of the CAP not only must be proficient in his task but also must be able to serve as an instructor, to convey his "know-how" to the newcomers who replace those who move on to other branches of the service, and to that increment which would come with a large-scale expansion.



Figure 5-44.--CAP members must be able to convey their 'know-how' to newcomers.



Figure 5-45.--Seniors and cadets have some theoretical training classes together.

Scope. The CAP program does not undertake to teach a member how to fly an airplane; that function is left to the private flying schools. But it does, with a comprehensive pre-flight training course, make it much easier for him to acquire that skill if he wishes. And it teaches him how to function with his fellows, either in the air or on the ground, in an effective unit organized to carry out specific aerial operations.

While the program of instruction is sufficiently flexible to meet the needs of any unit in any part of the country, all CAP units use the same formal training and instruction program outlines, issued periodically by the CAP National Headquarters Staff at Washington, D. C.

Among the subjects offered in the training program are:

1. Indoctrination. All personnel are given a thorough "air-age" orientation; are shown the organization of the United States defense establishment, and are taught how to function as a part of a military unit.

2. Aircraft. CAP members are given an intensive course of study in everything pertaining to the aircraft: why it flies, what it will do, and how it does it. The study embraces:

- a. Theory of flight.
- b. Aircraft structure.
- c. Types of aircraft, and their capabilities.
- d. Aircraft engines (including practical work experience in maintenance and repair crews).

- e. Aircraft instruments.
- f. Flying safety.

3. Navigation. A comprehensive course in how to arrive at a given destination under any conditions. The course includes:

- a. Use of maps and charts.
- b. Pilotage.
- c. Dead reckoning.
- d. Radio aids, including radar.

4. Meteorology. Weather is one of the most important single factors in planning any flight. CAP members are given a thorough grounding

HISTORY OF CAP ♦ CADET ENCAMPMENT ♦ CADET EXCHANGES ♦ CAP MISSIONS AND ACTIVITIES

USE OF MAPS ♦ PILOTAGE NAVIGATION ♦ DEAD RECKONING NAVIGATION ♦ RADIO AIDS ♦ RADAR ♦ AIR TRAFFIC CONTROL

AIR AGE ♦ AIRPLANE SPOTTING ♦ AIRCRAFT STRUCTURE ♦ AIRFOIL AND LIFT ♦ THRUST AND TORQUE ♦ FLIGHT CONTROLS

CIVIL AIR PATROL

AUXILIARY OF THE U.S. AIR FORCE



Certificate of Accomplishment

This is to certify that _____

_____ has successfully

completed _____ Training Course No. _____

Course content and hours of
credit earned:

_____ day of _____ 19____

AIR REGULATIONS ♦ NATIONAL SAFETY AND CONTROL ♦ INTERNATIONAL SAFETY AND CONTROL

VOCATIONAL OPPORTUNITIES IN AVIATION

Aviation subjects taught in the Civil Air Patrol are not only valuable in acquainting you with the Air Age in which you now live, but will provide a firm foundation for a civilian occupation of your own choosing

CIVIL AIR PATROL CADET COURSES

UNIT I. OUR AIR AGE (2 Weeks). Why and how aviation is entering our schools. How air power is used. The importance of aircraft manufacturing and scheduled air transportation. The nature and extent of fixed base flying. The responsibility of Government for aviation. The social, economic and political effects of aviation.

UNIT II. KNOW YOUR AIRPLANE (3 Weeks). Classification of aircraft by wing, engine and purpose. Nomenclature of principle parts. Explanation of general structure. The manner by which aircraft are designated and identified. Characteristics recognized by airplane spotters. Functional uses.

UNIT III. WHY THE AIRPLANE FLIES (5 Weeks). Basic aircraft terminology, non-technical theory of flight. Airfoil and lift, drag, thrust, and torque, gravity, stability, load factors, the controls and their effect on flight.

UNIT IV. POWER FOR FLIGHT (3 Weeks). The nature of the aircraft engine. Why and how engines are lubricated. Different types of engine cooling. The purpose and nature of a fuel system. Purpose and nature of the carburetor and fuel induction system. Purpose and nature of aircraft propellers. Advanced types of power plants such as Turbo, Jets, Ram Jets, and Rockets.

UNIT V. THE AIRPLANE AND THE AIRMAN (3 Weeks). Flight technique - a discussion of the manner in which the pilot handles the controls during the various flight maneuvers. Operation and Service - the safety measures which must be observed in the caring for an aircraft and its engine. Flight Instruments - an explanation of the instruments which enable a pilot to fly a plane with or without visual reference to the ground, and how they are used. Physiology of Flight - how man is affected by atmospheric changes. Equilibrium and the importance of physical fitness.

UNIT VI. WEATHER (5 Weeks). Elementary weather conditions and their effect on air operations. Study of weather by pilots. Sources of weather information. The nature of our atmosphere. The effect of atmospheric pressure on aviation. The causes of atmospheric circulation, winds, currents, and turbulence. The relation of moisture in the atmosphere to weather phenomena. Discussion of weather which accompanies the various air masses and fronts.

UNIT VII. PATH OF FLIGHT - AERIAL NAVIGATION (5 Weeks). Aeronautical maps and charts. Fundamentals of elementary navigation. The determination of location, distance, time and direction on the earth's surface. Discussion of various types of map projection, and what we learn from them. Dead reckoning and radio navigation. All weather flying and modern radio aids to navigation.

UNIT VIII. COMMUNICATIONS AND CONTROL (5 Weeks). The development of Air Traffic Control. How the air traffic control system is organized and how it functions. Language and facilities of Air Traffic Control. The purpose and application of Civil Air Regulations.

UNIT IX. NATIONAL AND INTERNATIONAL PROBLEMS OF SAFETY AND CONTROL (2 Weeks). The relation of Government and aviation. Methods of licensing and control. Problems arising from the development of International Aviation. The organization and administration of the bureaus, offices and international organizations responsible for carrying on aviation activities.

UNIT X. AIRPORTS (3 Weeks). The place of the airport in the community, its uses, benefits, and classification. The location of the airport, and its relation to other businesses. Physical characteristics of the airport, runways, lighting, emergency and maintenance equipment. Operation of the airport on a business basis, finance, operational income, legal and management problems. A study of the adequacy of airport facilities in the community.

UNIT XI. VOCATIONAL OPPORTUNITIES IN AVIATION (2 Weeks). Classification of occupations and jobs in aviation. A study of the skills, interests, and abilities needed. Grouping of aviation jobs by function. Women in aviation. How to find work in the field of aviation. Essential information necessary for job selection. Testing methods and training opportunities.

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RELATED CIVILIAN OCCUPATIONS

Civil aviation is making sound and steady growth with many thousands of persons regularly employed and many more in the years to come. The normal technical training afforded by Civil Air Patrol will aid the young people who sincerely feel that they are genuinely interested in the field of aviation and who are qualified to fill some useful place in this ever-growing industry.

Aircraft engine mechanic (E)
Aircraft woodworker
Carburetor specialist
Electrical accessory specialist
Engine accessories mechanic
Engine cylinder, valve and piston specialist

AIRCRAFT AND ENGINE MECHANICS
Engine disassembler
Engine installer
Engine small parts repair specialist
Welder
Fabric specialist
Government inspector

Hydraulic specialist
Ignition specialist
Instrument repair mechanic
Plastic worker
Propeller specialist
Radio maintenance mechanic
Sheet metal specialist
Supercharger repairman

Airport engineer
Airport manager
Cargo agent
Civil Aeronautics Administration official
Communication clerk
Control tower operator
Flight control clerk
Flight dispatcher
Flight engineer
Food service personnel

AIRLINE AND AIRPORT OPERATION AND AIR CARRIERS
Hostess
Aeronautical engineers
Flight stewards and stewardesses
Engine mechanics
Aircraft mechanics
Pilots

Meteorologist
Radio operator
Switchboard operator
Teletype operator
Inspectors
Flight surgeons
Link trainer operators
Instrument repairmen
Maintenance personnel
Traffic managers
Navigators

Accountant
Administrative assistant
Advertising manager
Art specialist
Bookkeeping machine operator
Buyer
Cashier

GENERAL BUSINESS FIELD
Clerks
Comptometer operator
Customer relations man
Employee counselor
Key punch operator

Operator, switchboard
Radio control clerk
Receptionist
Salesman
Secretary
Teletype operator
Timekeeper
Warehouseman and clerk

Aerodynamicist
Aeronautical engineer
Aircraft designer
Blueprint and photostat operator
Chemist and metallurgist
Contract specifications engineer

ENGINEERING
Flight service engineer
Government inspector
Inspector in engineering
Laboratory technician
Patent investigator
Production engineer

Research engineer
Statistical analyst
Technical illustrator
Technical writer
Time and motion study expert
Work simplification analyst

Co-pilot
Flight cargo engineer
Flight dispatchers
Flight engineer
Flight inspector
Flight instructors
Ground instructors
Link trainer instructor
Meteorologists
Navigator

FLIGHT OPERATIONS
Parachute packer and rigger
Pilot
Radio operator
Stewardesses and stewards
Architect
Attorney

Auto mechanic
Cabinet maker
Carpenter
Commercial artist
Construction engineer
Editorial writer
Education specialist
Electrical engineer
Electrician
Engineer, safety

Engineer, aircraft
Fabric worker
Heat treaters
Hydraulic and tubing specialist
Industrial engineer
Inspector
Instrument worker

AIRCRAFT MANUFACTURING
Laboratory aids
Machinist
Maintenance mechanic
Messenger
Nurse

Painter
Plastic worker
Sheet metal worker
Riveter
Small parts assembler
Rigger
Upholsterer
Welder

Accounting clerk
Airway control (CAA) worker
Flight instructor

OPPORTUNITIES FOR WOMEN
Instrument inspector

Link trainer instructor
Stewardess
Teletype operator
Traffic control clerk

Air carrier radio inspector
Air carrier operations inspector

C.A.A.
Flight engineer inspector
Maintenance inspector

Aircraft communicator
Air safety inspector
Airways traffic controller

in the composition and significant characteristics of our atmosphere. The course includes study of:

- a. Atmospheric pressure.
 - b. Air circulation, winds, currents, and turbulences.
 - c. Moisture.
 - d. Air masses and fronts.
 - e. Weather instruments.
 - f. Weather information for the pilot.
5. Flight training. Orientation flights and actual flying missions, coordinated with the theoretical studies, are an important part of CAP training. Although unlicensed personnel may participate in aerial flights as observers, however, only members holding CAA certificates are permitted to operate aircraft.
6. Communications. Communications training includes both theoretical and practical studies in:

- a. Telephone and telegraph.
- b. Teletype and facsimile.
- c. Radio telephone and telegraph.
- d. Visual signals (flags, light, smoke, panels, etc.)
7. Military courtesy and customs.
8. Administration. How a military organization functions: channels of command, supply, personnel, record-keeping, etc.
9. Missions and practice missions. The CAP member depends not alone upon books and classroom instruction for his training, but participates as well in frequent missions and practice missions in which his newly-acquired knowledge is put to practical use in the field and in the air.

The Training Staff. Although the unit commander in each echelon is ultimately responsible for all activities in his unit, his training officer is responsible for the organization and conduct of the training program within the unit and is assisted by a training staff commensurate with the size of the unit and the scope of its program.

1. Wing Staff. The wing training officer and his assistants, the number of whom will vary with the requirements of each wing, exercise general supervision of all training activities conducted by groups, unattached squadrons, and by any other units directly responsible to Wing Headquarters. Where it is necessary, they adapt the training courses issued by National Headquarters to the special needs of their wings. They make frequent trips, formal and informal, in the field, both to aid the training officers in subordinate units and to obtain from those officers suggestions relative to the conduct of the training program.

2. The Squadron and Detached Flight. These are the working units of the training organization, and it is here that the unit commander must have on his staff the most competent and enthusiastic person available for the post of training officer, and similar care should be exercised in the choice of the training officer's assistants. Air Reserve officers frequently are utilized for such posts. In areas where units are large and classes many, members of the training staff may have the responsibilities divided among them, one taking the work in theory of flight; another, instruments; a third, communications, etc. The assistant training officer does not teach except in a substitute capacity, but prepares course outlines, helps develop training aids, and assists the training officer in preparing over-all schedules.

The duties of the staff are:

1. Physical planning. Determining requirements for physical facilities in which to conduct training.
 2. Recruit and assign instructors.
 3. Prepare course outlines (but not daily lesson plans, which are prepared by the instructor).
 4. Prepare training schedules.
 5. Organize classes. Age, abilities, and background of students are taken into consideration in organizing classes.
 6. Screen applications for admission.
 7. Supervise instruction and testing.
 8. Maintain training records.
 9. Maintain liaison with schools and community.
 10. Advise unit commander on progress of training and on training requirements.
- General.** It will be seen that theory and practice are so thoroughly merged in the CAP program that it is difficult to tell where the training leaves off and the operations begin. So let's have a look at operations.



Figure 5-46.--The use of training aids facilitates the instruction program.

OPERATIONS

Except with regard to the cadet program, which is a separate mission within itself, all of the activities of the Civil Air Patrol--administration, personnel, intelligence, training, and supply--are directed toward one end, and one end alone: operations.

Just as the joint efforts of 10 members of a football team are required to supply the interference and blocking which makes it possible for the eleventh member to cross the goal line with the ball, so the efforts of all other sections in an Air Force or CAP unit are expended on behalf of their "ball-carrier," the operations section.

Even the cadets fit into the above category to some extent, for their training activities are integrated as much as possible with those of the seniors, and cadets have rendered valuable service in many missions. They too, therefore, frequently contribute to the success of the "ball-carrier."

Here is the way operations are carried out:

The Mission. CAP missions fall into three general types: aerial, such as a pipeline patrol; ground, as in a communications problem; and combined air-ground operations, like a search and rescue mission, where flying personnel and ground rescue units both are used. Regardless of the type into which the mission may fall, the operations section organizes, plans and supervises it.

Although many unit activities are initiated and carried out within the unit, most official missions will originate with a higher command echelon, and in most instances will be activated by a field order.

The Field Order. The field order is the command which sets the mission into motion, but it is much more than that, for in it is given all of the basic information needed to bring the operation to a successful conclusion: maps and charts, a list of the organizations participating, an estimate of the general situation, the specific mission to which the unit is assigned, tasks for subordinate units, and administrative, logistical, command, and communications data.

A form for a field order, showing exactly what data it should contain and the sequence in which it should be given, accompanies this text.

Planning the Operation. While the basic information concerning the operation is contained in the field order, much additional data must be gathered by the commander of the subordinate unit before he can send his aircraft aloft or dispatch his trucks and rescue crews.

He therefore confers first with his specialists, the weather, signal, and transportation officers, and such others as can give needed information and advice. Then he draws up a detailed plan of operations, which will take into consideration all of these factors:

1. Number and type of aircraft (or trucks, etc.) needed to carry out the assigned mission.
2. Proficiency of the crews.
3. Special equipment required, if any.
4. Geography of the area to be covered.
5. Required fuel supply.
6. Course to be followed.
7. Weather factors.
8. Communications.

On the basis of those factors, the complete plan of action is mapped out. Each section has been assigned the specific duties it will have in the forthcoming operation.

Briefing. Next step is the briefing of the crews which actually will perform the operation. They will be given all of the data assembled by the unit commander and then each will be briefed individually on the part he himself will play, so that each man is aware of exactly what is expected of him.

From that point on, the job is in the hands of the men who are flying the mission.

Interrogation. After the mission is completed, the unit commander or, in the case of a search and rescue mission, the mission commander, will interrogate all members of the crews on all phases of the mission as they saw it, and, in the case of search and rescue, will obtain Form 15 data from them. Thus the success or failure of the mission can be evaluated quickly.

Critique. Last, but not least, is the critique, a conference at which the advantages or difficulties arising out of the operation are discussed. The results of the critique are used in planning the next similar operation. With the critique over, the operation is complete.



Figure 5-47.--The crews are thoroughly briefed before the aircraft leave the ground.

FORM FOR A FIELD ORDER

Classification

Headquarters

Type of order and Serial No.

Place

Date

CHART OR MAP REFERENCES:

ORGANIZATION: (List here, when appropriate, the subdivisions or components which will comprise the command, together with the names and ranks of the commanders).

1. SITUATION: (Give briefly the general picture so subordinate commander will understand the current situation.

a. Unfavorable Elements: (Difficulties likely to be encountered during the operation).

b. Favorable Elements. (List here any factors likely to contribute to the success of the mission).

2. MISSION: (A statement of the task which is to be accomplished by the unit commander, and its purpose).

3. TASKS FOR SUBORDINATE UNITS: (In separate lettered subparagraphs, assign specific tasks to each element of the command charged with the execution of tactical duties).

x. (In subparagraph x, give instructions applicable to two or more units or elements or to the entire command which are necessary for coordination of the general conduct of the operation, the repetition of which in the other subparagraphs of Paragraph 3 would be cumbersome. If the order is not effective upon receipt, indicate effective time in this subparagraph).

4. ADMINISTRATIVE AND LOGISTICAL DATA: (Instructions to tactical units concerning supply, availability of services, evacuation, and traffic details required for the operation as applicable. These details frequently are covered in an administrative order, a standard operating procedure, or an annex).

5. COMMAND AND SIGNAL MATTERS: (Plan of communications --- may refer to a standard plan or to be contained in an annex --- zone time to be used, rendezvous, location of commander and command posts, statement of command relationship, and axis of signal communications as appropriate).

Commander

Annexes:

Distribution:

Authentication:

REFERENCES

TM 21-250 Army Instruction.
 FM 21-5 Military Training.
 W.D.FM 101-5 Staff Officers Field Manual,
 the staff and combat orders.
 CAP Reg. 55 Series Operations.

CAP Reg. 60 Series Flying.
 CAP Reg. 76 Series Air Transportation.
 CAP Reg. 900 Series Miscellaneous.
 CAP Reg. 50 Series Training.
 CAP Reg. 30 Series CAP Cadets.
 CAP Reg. 35 Series CAP Personnel.
 CAP Reg. 45 Series Air Force Reserve.

A-4--SUPPLY

INTRODUCTION

GENERAL

The problem of supply in any military movement is of tremendous importance. Each war has made new and greater demands on the supply system. Among primitive peoples each warrior furnished and carried his own supplies of war: axes, spears, food, or whatever he needed. Each advance in the art of war has meant an increase in the number and amount of supplies needed to fight. In general, it is recognized that a small, well-equipped, well-supplied force will defeat a large, poorly-equipped, poorly-supplied force. All modern wars--the American Civil War, the Franco-Prussian War, the Russo-Japanese War and the two World Wars--have been won by the side with the greater capacity for the production and transportation of supplies to the fighting fronts.

Supplies begin with natural resources, move on through industrial processes and end when assembled and made available to the user in the form of finished products.

SUPPLY AND MAINTENANCE

National Level. A-4 is responsible for supervising and conducting the supply and maintenance program of CAP. It has direct charge of supply supervision of 52 AF-CAP liaison officers located at the various wing headquarters, who are themselves supply officers and accountable for federal property. It also has supervision through command channels of the

52 CAP wing supply accounts. A-4 promulgates the necessary regulations and directives of supply and maintenance for both the AF-CAP liaison officer stock record accounts, and of wing supply accounts. Records are maintained of all aircraft and vehicles assigned, or on loan, to CAP.

Wing Level. Property at Wing level is generally divided into two categories, I and II.

Category I -- AF-CAP Liaison Officer Stock Record Account.

- (a) Property in this category is held by the Liaison Officer, and is accountable to the Federal Government. It includes those administrative items necessary to operate the Liaison office as well as equipment and supplies temporarily on loan from Government agencies to assist in the carrying out of assigned CAP missions.

Category II -- Wing Supply Account.

- (a) Property in this category includes items purchased by members in the name of the wing, items purchased by the individual CAP Units from CAP funds; items donated by individuals or corporations; and items made available to CAP as surplus to the requirements of the military establishment.

A category which cannot be listed here, but is due recognition is equipment which is owned by the individual members of Civil Air Patrol, and used during its many activities.

Clothing. Senior members and cadets provide their own uniforms with the exception of a limited number of items which can be made available from surplus military supply stocks. Uniforms are purchased from regular military supply houses or may be purchased through the Quartermaster Supply as provided by AF Reg. 45-11.

Insignia. Several commercial supply houses manufacture and stock the various items of uniform and insignia required in the CAP program. Lists of available items are furnished each Wing Headquarters, which may order direct from private manufacturers.

Maintenance is performed by both CAP and the U. S. Air Force.



Figure 5-48.--A wing supply room.

Organizational maintenance is done by qualified members of the CAP as part of the training program and covers a wide variety of machines and equipment.

Field or Depot Maintenance usually of a highly specialized nature of involving heavy equipment not in the possession of any of the CAP units is done by the USAF. This applies only to that equipment which is on loan to CAP.

Because the supply procedures and terminology, with few exceptions, are identical in both the U. S. Air Force and the CAP, and because the CAP's supply organization is intimately associated with that of Air Force, the AF procedures will be given here.

ORGANIZATION

DEPARTMENT OF THE ARMY SUPPLY ORGANIZATION

The Director of Service, Supply and Procurement, Department of the Army, General Staff, exercises general staff responsibility for all matters of service, supply, and procurement pertaining to the Army. He reports to the Chief of Staff on matters pertaining to service and supply. The matter of distribution is usually accomplished by delegating responsibility for supplies to the chiefs of supply of the arms and services which include:

Transportation. The Transportation Corps is responsible for surface transportation and certain technical supplies for its own operation.

Ordnance. The Ordnance Department is responsible for guns, ammunition, motor vehicles and supplies and equipment pertaining to them.

Signal. The Signal Corps is responsible for all means of communication, except normal mail facilities, and supplies and equipment pertaining to them.

Engineers. The Corps of Engineers is responsible for permanent and field construction, demolition, real estate, all utilities, fire protection and supplies and equipment for these activities.

Quartermaster. The Quartermaster Corps is responsible for all supplies of standard manufacture and those common to two or more services not specifically assigned to other services.

Chemical. The Chemical Corps is responsible for chemical weapons, material and equipment.

Medical. The Medical Department is responsible for supplies and equipment needed by its own service which are not specifically required to be furnished by other services.

United States Air Force. Supplies peculiar to the United States Air Force are supplied by the United States Air Force.

Items from all the supply services except United States Air Force are stored in technical service depots, or as they are commonly called, general depots. Supplies and equipment peculiar to the USAF are procured and distributed by the Commanding General of the Air Materiel Command. USAF supplies are distributed by Air Materiel Area Depots.

PROCUREMENT

All supplies and equipment procured by the National Military Establishment are supplied by contracts entered into with industrial organizations throughout the country. Thus it can be shown that the success of any military organization is dependent upon the industrial and natural resources of the country.

DISTRIBUTION

Base Supply. Supplies are distributed to posts, camps, and stations by the depots in accordance with approved requisitioning procedures.

Base Accountable Supply Officer. One officer and only one officer at each USAF base is designated the base accountable supply officer. It is his duty to receive, store, issue and keep complete records (property accounting system) on all property on the base.

GENERAL PRINCIPLES

FUNCTIONS

For convenience of administration and efficiency of operation, supply is divided into the functions of procurement, storage, issue, salvage, accounting, and transportation. All of these taken together make up the supply machinery with which the supply mission is carried out.

FUNDAMENTAL RULES

The supply system in use during the war was the best that has been devised to date, but errors did become apparent and have been, or are being, corrected as rapidly as possible. One of the soundest principles of the USAF plan of supply is its unification. For obvious reasons certain fundamentals had to be standardized. Under the USAF plan as outlined in Air Force Manual 67-1, a supply officer trained in Alabama can

handle supplies in Egypt or Alaska; the administration is the same anywhere in the world. This standardization extends through all USAF supply personnel, procedures and equipment. The functions and responsibilities of all personnel are clearly detailed in AAF and AF Regulations and other pertinent publications so that each person will know what he should do and all personnel on similar jobs will do their work in substantially the same way.

TERMINOLOGY

The importance of correct terminology and a common language for staff officers in dealing with supply cannot be overemphasized.

Logistics. Logistics is that branch of military art which embraces the details of the provision and maintenance of personnel and material for the support of the military establishment and for the conduct of military operations.

Supply Arms. The supply arms of the Military Service charged with the procurement, storage, and distribution of supplies need no definition. They are the Army Area Commands (formerly Army Service Forces) and the United States Air Force. These operate through the technical services in case of the Armies and through the Air Materiel Command in case of the Air Force.

The supply arms and services of the Army and the Air Force are:

- Quartermaster Corps.
- Medical Department.
- Air Force.
- Corps of Engineers.
- Ordnance Department.
- Chemical Corps.
- Signal Corps.
- Transportation Corps.

These organizations operate through a system of supply establishments located throughout the Zone of the Interior. Supply establishments are those establishments through which the supply functions of the Chiefs of Arms and Services are accomplished, such as arsenals, manufacturing plants, and depots. These supply establishments come right on down the chain of supply to post, camp and station supply warehouses and squadron and unit supply rooms--all supply establishments.

Depots. Depots are supply establishments maintained primarily for the purpose of receiving, storing, and distributing supplies. They may have other functions such as manufacturing, procurement modification and repair as directed by regulations and orders.

Depots are the backbone of the supply system. Their three basic missions in the Zone of the Interior are: procurement, storage, and distribution.

Air Depots. Air depots are military establishments which include landing fields, base facilities, and facilities for the wholesale receipt, storage and distribution of USAF supplies and for administering fourth echelon aircraft maintenance and which exercise control over the distribution of USAF supplies within a designated area. There are 7 area air depots, which are set up at strategic points throughout the United States. However, the definition given doesn't entirely hold true because these are distribution depots which act as retailers too in that they distribute supplies to air base units. There is also a trend toward USAF depots taking over the storage and issue of common items of supply as well as USAF supplies. The responsibility of these installations for supply is limited to their area. All the base units and combat units in an area are served by this depot. All of these are under the control of the Air Materiel Command.

General Distribution Depots. Establishment. Effective 1 July 1947, the War Department established the Postwar Depot Plan which designated the following depots as general distribution depots:

Schenectady General Depot--First Army Area and New York Port of Embarkation.

Columbus General Depot--Second Army Area; Military District of Washington; and Fifth Army Area.

Atlanta General Depot--Third Army Area and New Orleans Port of Embarkation.

San Antonio General Depot--Fourth Army Area, less New Orleans Port of Embarkation.

Utah General Depot--Sixth Army Area; Seattle and San Francisco Ports of Embarkation.

The chiefs of technical services are responsible, through their supply officers at the depots listed, for the supply of troops and stations within the geographical limits of the specified areas and for supply action on all requisitions received from assigned ports of embarkation.

Stock Level. General distribution depots maintain a 90-day stock level for each technical service supply section.

Intransit Depots. Intransit depots are military establishments designed to serve as a holding and reconsignment point for regulating the orderly movement of supplies and material to and from using points of distribution.

Specialized Depots. Specialized depots are USAF depots in the Zone of the Interior which store and issue one or more classes of USAF supplies. The purpose of establishing these depots is to have the items of the various classes concentrated in one locality, thereby eliminating the artificial shortages that would be created if these items were issued to the various issuing depots throughout the Zone of Interior. They are frequently located near the factory which produces the items.

Bulk Storage Depots. A bulk storage depot, as its name implies, is an installation which holds slow-moving items and reserve stocks, thus making it possible for other USAF depots to handle only relatively fast-moving items. These are currently being eliminated from the USAF supply picture.

Market Centers. Market centers are installations operated by the Quartermaster Corps in the Zone of the Interior for the procurement of perishable subsistence. There are 13 of these market centers located in principal cities in the United States which purchase fresh meat, fruits and vegetables.

Supplies. The term supplies includes all items of materiel needed to equip and maintain a command. Therefore, all items of equipment, spare parts, food, fuel and ammunition, are referred to by the general term supplies. Common supplies are those items common to all forces, air and ground. It is the policy for the USAF to obtain these wherever practicable from ground or service installations. Technical supplies are those procured, stored, or issued under special conditions. Supplies peculiar to the United States Air Force or simple USAF supplies are those procured for the exclusive use of the United States Air Force, or for use on materiel assigned to other agencies (L-15's with Artillery Units). They include United States Air Force technical supplies procured through the Air Materiel Command and non-common supplies procured by technical service for the exclusive use of the USAF; for example, bombs or chemical spray tanks.

Regulated Items. Regulated items are those over which the chiefs of technical service (ordnance, signal, engineers) must exercise close supervision of issue to insure distribution to proper units and commands in accordance with Department of the Army priorities, because they are especially scarce, expensive or highly technical or hazardous by nature.

Classes of Supplies. Expendable. Expendable supplies are those whose physical characteristics are such that they are consumed

when used, such as paint, fuel, rations and cleaning materials, as well as articles such as spare parts which are used to repair or complete other articles and thus lose their identity.

Expendable Recoverable. Expendable recoverable supplies are those which become unserviceable through normal use in service but can be economically repaired in whole or part and reused. With these articles, the issue of a new part requires the turning-in of the old or used part. Good examples include aircraft starters and generators. This classification does not in any way change the expendable status of the property.

Nonexpendable. Nonexpendable supplies are articles which are not used up and which automatically keep their identity during the period of use. Nonexpendable articles are utilized as distinguished from consumed, such as flying suits, tools, typewriters and furniture.

Levels of Supply. In general, supplies in the hands of troops and in unit or station storage are limited to the minimum necessary for current peacetime requirements. All supplies in excess of day-to-day requirements are stored in depots, where they are available both for current needs and for emergencies.

Minimum Level of Supply. The minimum level of supply is the smallest quantity of supplies to be held at a supply establishment measured in days of supply or in specific quantities of an item. This amount should be held in reserve and drawn against only in an emergency. Minimum level is the smallest quantity which the stock is allowed to reach before action is taken to get some more. The length of time necessary to get some more must be considered in setting the minimum level.

Operating Level. The operating level of supply is the quantity of supplies measured in days of supply or in specific quantities of an item necessary for the day-to-day maintenance of the command. This level is determined by the frequency of shipment and the time required for delivery to the using unit.

Maximum Level. The maximum level of supply is the greatest quantity authorized to be on hand at a given supply point, base, command, or depot, measured in days of supply or in specific quantities of an item. The maximum level is the minimum level plus the operating level. The maximum stock level at depots is based on the issue

actually made during the past period (which should not exceed one year).

Back Order. Back order is the term applied to items on a requisition which are not available at the supply installation, but which will be supplied upon receipt by the supply agency without any further action on the part of the requisitioning unit. If the items are cancelled from the requisition, it means that the unit will have to submit a new requisition. Back ordered items will be supplied without this action.

AIR MATERIEL COMMAND

The Deputy Chief of Staff for Materiel is the section on the Air Force level which is most concerned with matters of supply.

MISSION

The Air Materiel Command (AMC), one of the 8 major commands in the Air Force, has the mission of research, development, and procurement of aeronautical materials, associated equipment, accessories, and supplies peculiar to the United States Air Force. The Commanding General of Air Materiel Command is responsible for:

Conducting all experimental, static, and flight tests in connection with development of aircraft and accessories.

Procurement of aircraft, spare parts, equipment and supplies, performing the operating functions relative to contract termination and salvage and disposal of all United States Air Force aircraft, accessories and equipment.

Scheduling of production, allocation of production by plants, production control, and acceptance of aircraft and allied material peculiar to the needs of the United States Air Force.

Controlling modification of aircraft to meet current military requirements.

Control of depot supply functions, receipt, shipment, storage, and issuance on the basis of approved requirements.

Establishing a system of stock control and reports to insure the most efficient distribution of available supplies, equipment, tools, machinery, and maintenance facilities.

Issuance of technical instructions and provision of technical assistance to activities within the continental United States directly related to supply and maintenance.

Organizing, processing, training and preparation for dispatch overseas of depot groups and service units on depot level.

Performing such additional supply and maintenance missions relative to specialized aircraft and technical equipment as required by the United States Air Force.

LOGISTICAL SUPPORT

From the list of responsibilities outlined for the Commanding General, Air Materiel Command, it is seen that he is primarily responsible for the logistical support in matters of special equipment for the United States Air Force.

SUPPLY FUNCTION OF AIR MATERIEL COMMAND

The supply function of Air Materiel Command is to insure that supplies and equipment are developed, procured, produced, distributed, and maintained as expeditiously as possible to fulfill the requirements of commands in the Zone of the Interior and in theaters of operations.

Requirements. Determine requirements for materiel used by the air forces and commands in accordance with AF Regulations and directives.

Supply Operations. Air Materiel Command is responsible for furnishing supplies and equipment peculiar to the USAF including those supplied by the Army to the USAF, in accordance with supply policies and general procedures established by the Chief of Staff, USAF, and with specific supply operating procedures established by the Director, Air Materiel Command.

Supply Procedures. Specific operating procedures, as prescribed, subject to policies and general procedures established by the Chief of Staff, USAF, for storing, determining stock levels, requisitioning, inventorying, reporting stock inventories and consumption data, property accounting, return of excess, surplus, and obsolete stocks to Air Materiel Command installations, and for other supply operations.

Redistribution of Excess. Air Materiel Command also accomplishes the redistribution of excess supplies and equipment within and among other commands and air forces subject to policies enumerated in AF and AAF Regulations.

High Priority Requirements. Air Materiel Command directs the shipments of materiel and supplies from other commands and air forces in order to meet the needs for overseas and other high priority requirements.

AIR MATERIEL AREAS

The United States has been divided into 7 Air Materiel Areas as follows:

Sacramento, California.

Ogden, Utah.

San Antonio, Texas.

Mobile, Alabama.

Oklahoma City, Oklahoma.

Middletown, Pennsylvania.

Macon, Georgia.

Mission. The mission of the AMC areas is to act as a monitoring agency for requisitions from stations within each area. All requisitions for USAF supplies go through area depots. These requisitions are either filled or routed to specialized depots or other USAF installations where supplies are available.

Description. These area depots are comparable to wholesale house and warehouse. Normally they stock 3 months' supply of recurring requirements for each respective area.

Specialized Depots. Specialized depots are located at various points throughout the continental United States. Their purpose is to supply depots and USAF installations with USAF specialized equipment. These are under the command of area depots, but they serve all areas.

Description. They are comparable to specialized warehouses. They maintain central stocks of certain specialized equipment, normally only one or two classes of supplies. For example, the 832nd Specialized Depot at Topeka, Kansas handles class 28-A, B, C, Synthetic training devices, and other related classes of property.

Stock Level. Specialized depots maintain a 90-day level of supplies.

AIR FORCE BASE SUPPLY
ORGANIZATION

WING BASE ORGANIZATION

The type of organization in effect at Air Force bases during World War II was not standard. Prior to the war, a division into 4 staffs, S-1, S-2, S-3, and S-4, was common. During World War II the Tri-Directorate System was initiated. Each of these systems had strengths and weaknesses, but in general, it was felt that in both plans, adequate emphasis was not placed on the primary mission of the base.

Most bases in the continental United States are organized on the combat base plan. Other types of bases differ only slightly from the combat-type organization.

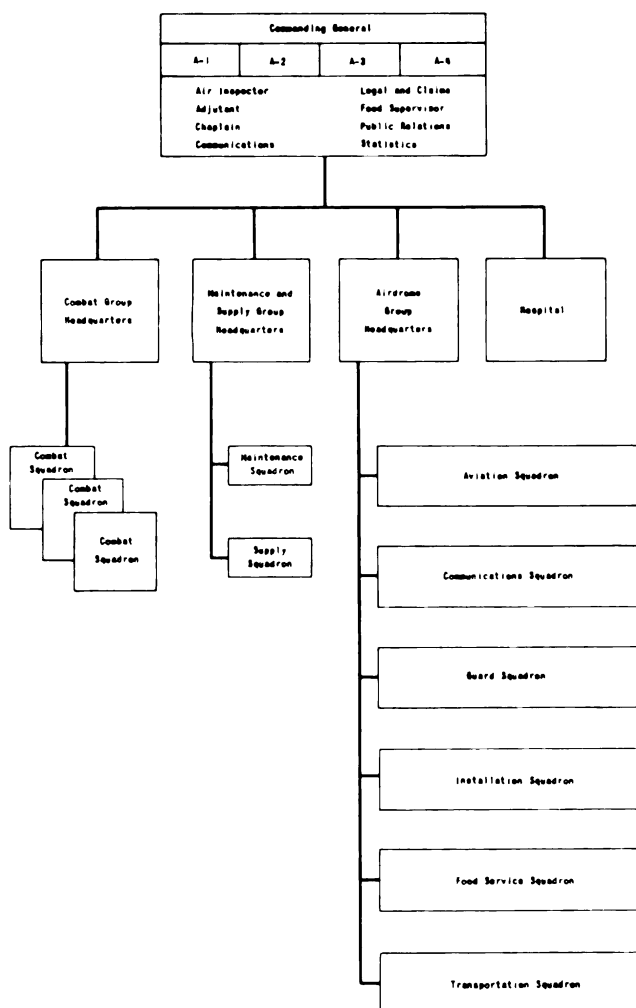


Figure 5-49.--Organization of a Wing Base.

Under the Combat Wing Base Organization there is a Combat Group Headquarters, a Maintenance and Supply Group Headquarters, an Airdrome Group Headquarters, and a Hospital. Each activity maintains its own squadron. For example, the Supply Squadron includes all the supply personnel.

The Wing Base Organization provides for the following:

Establishes clean-cut command channels.

Eliminates split jurisdiction and/or responsibility.

Provides for a strong central control with decentralized operations.

Provides actual command positions for company grade officers.

Individuals will be clothed, housed, paid, promoted, worked and administrated by their commander.

Limits the size of the basic functional units to a maximum of 250. Provides for necessary mobility and flexibility.

BASE ACCOUNTABLE SUPPLY OFFICER

Definition. The base accountable supply officer is an officer officially designated in accordance with AF Regulation 65-2 to maintain a stock record account of, and be accountable for, all properties at an installation except:

Base theater property.

Installed property recorded on WD AGO Form 661 maintained by the air installation officer.

Quartermaster sales account.

Property in possession or under control of salvage officers.

Equipment, supplies, and other property procured, used, stored, maintained, or issued by the air installation office in connection with repairs and utilities work under his supervision. It is to be remembered that there is one and only one base accountable supply officer at a base.

General Duties. The base accountable supply officer has responsibility to:

Direct the operation of the activities placed under his supervision.

Inform the base commander in matters pertaining to supply, and make recommendations as to the necessary decisions concerning supply.

Coordinate all matters pertaining to supply with the base shops and with using organizations and operating sections on the air base.

Coordinate with the transportation officer on types of packing and crating most suitable for the mode of transportation to be employed.

Obtain the maximum utilization of personnel placed under his control.

Insure that correct policies are formulated and that required procedures are being followed.

Organization. There is no hard and fast rule as to the organization of an accountable section as each base accountable supply officer may organize the department as he desires. Air Force Manual 67-1, Air Force Base Supply Procedure, has further simplified and standardized the procedure:

Administrative Section. The administrative section handles:

Assignment and accounting for all personnel.

Correct preparation and distribution of all paper work.

The preparation and forwarding of reports and correspondence.

Depot, shop, and line liaison.

Answering routine questions and dealing with everyday problems which require a comprehensive knowledge of supply procedure.

Maintaining complete files for base supply activities of all Technical Orders, Army Regulations, Department of the Army Circulars, Supply Bulletins, Technical Manuals, General Orders and other publications required to be kept on file.

Acting in the capacity of a librarian to any supply personnel requiring the use of publications.

Stock Control or Property Accounting Section. General Functions. The general functions of this section are to:

Procure or requisition all material required by base supply.

Maintain the base accountable records, the stock record account of the station.

Edit requests from organizations, base shops, and the other activities for correctness, and then process them to the stock record section for action.

Effect stock control and maximum distribution of available supplies.

Maintain the central master voucher register and the files of completed vouchers to the stock record account.

Special Functions. Memorandum Receipts Unit. The memorandum receipts unit is responsible for maintaining the memorandum receipt account jacket file which contains copies of the valid vouchers supporting the entries on the stock record cards that affect the column "Serviceable Balance on Memorandum Receipt." The memorandum receipt account reflects the total balance of property issued on loan to responsible officers for which the base accountable supply officer maintains accountability. Jacket files of memorandum receipts for each responsible officer are kept here, as well as the index card files of all memorandum receipt accounts, which show the account number and the name of the responsible officer.

Requirements Unit. The requirements unit is responsible for the preparation of all requisitions and purchase requests that originate in base supply either for stock replenishment, for emergency, or for special projects.

Voucher Unit. The voucher unit, which should be located adjacent to the stock record account, maintains the master voucher control index for the consolidated stock record account and assigns comprehensive blocks of voucher numbers for each technical service and the USAF. These numbers are recorded on the voucher register pages, DA AGO Form 272, which form the basic documentary record of transactions affecting the stock record account. The voucher clerk checks all vouchers for validity and then

files them in numerical sequence by fiscal year.

Editing Unit. The editing unit receives all written requests to draw supplies from the station stocks, and edits such requests for stock number, nomenclature, obvious errors, and for authorization and then approves for issue.

Stock Record Unit. The stock record unit maintains the station stock record account. The primary purposes of maintaining a base stock record account are to:

Enable the establishment of a control over base stock control levels.

Record receipts, issues, and transfers of supplies in such a manner that the quantity on hand can always be readily ascertained; also, that the quantities so recorded will reflect an accurate statistical figure which may be used to anticipate requirements and to establish maintenance activity work levels.

Maintain a record of accountability.

These aims are usually accomplished by posting individual property vouchers directly to the stock record cards. Stock record cards are maintained for each item of stock at the base for which accountability by the base accountable supply officer is required to be maintained.

Inventory Unit. The inventory unit, although under the stock control section, works very closely with the warehousing section. They are continually working, according to their inventory schedule, counting property as the first step toward periodic reconciling of the stock record accounts with balances of property on hand in storage. Station stocks must be completely inventoried at least once every 6 months.

Cost Accounting. A recent addition to the duties of the supply officer is that of cost accounting. The purpose of this system is to provide accurate data on cost of operation for use in the preparation and justification of budgetary estimates and quarterly funds requirements.

Warehousing Section. General Functions. The warehousing section has the responsibility of receiving, storing, and selecting for shipment or issue, all supplies handled by base supply.

Special Functions. Shipping and Receiving Unit. The shipping and receiving unit, if that type of unit is in operation, provides a central point for the supply division to do just what the title implies, ship and receive property.

Inspection Unit. The inspection unit maintains a file of technical orders, stock lists, standard nomenclature lists, catalogs, blue prints, cross reference charts, and other

publications. It is responsible for the identification and visual inspection for serviceability or other conditions of all property received, stored, or shipped by the base supply. It also prepares unsatisfactory reports, initiates action to have necessary work done on parts or assemblies in storage as set forth by technical orders, and identifies reparable items.

Reparable Unit. The reparable unit:

Identifies all supplies received in the central receiving and classification unit, including tagging where necessary.

Determines for each item of reparable supplies received in the central receiving and classification unit, the applicable disposition or repair priority as prescribed in existing directives.

Maintains necessary accounting and related records for all reparable items.

Provides base maintenance, upon request, with information regarding receipt of reparable items assigned first priority of repair.

Operates the reparable storage warehouse, including the receiving, storing, issuing, and inventorying of reparable supplies.

SOURCE OF SUPPLIES

Regular Sources. Supplies peculiar to the Air Force come through the facilities of AMC, AMC area depots, and specialized depots. Supplies common to other branches come from general depots. AF Form 104 B, Requisition and Shipping Ticket, is used when requisitioning USAF Supplies. WD AGO Form 445, Requisition, is used to requisition supplies from the other technical services.

Special Sources. Local Purchase. Local purchase is the purchase made in the immediate locality of a base when the item is not available through normal supply channels, or other Army or Air Force supply sources in the immediate vicinity.

Local Manufacture. In the theaters of operations and to some extent in the Zone of the Interior, it sometimes becomes necessary to manufacture some parts that are not obtainable from other sources. This source of supply is used less than any other methods.

SERVICE STOCK

Definition. A service stock consists of predetermined quantities of specified items of frequent issue conveniently located and reserved for issue to a maintenance shop, repair activity, personnel processing activity or sub-base for use in performing the operation of that activity.

Purpose. The purpose of service stock is to provide a convenient point of storage adjacent to the activity served to which frequently required items may be transferred in bulk and reissued by individual item where needed. This is done to simplify records for these items.

Stock Level. The stock level for service stock units will not exceed a 15-day level of supplies.

PROPERTY ACCOUNTABILITY

GENERAL

The terms accountability and responsibility have been used previously in the text with little explanation of the connotation of the 2 terms. They do, however, have definite implications in supply usage.

ACCOUNTABILITY

Accountability is the obligation of an individual to maintain accounting for certain property on a property account or record.

Accountable Officer. An accountable officer is an officer officially designated for the purpose of maintaining accounting on specified Government property. One officer and only one officer at a base is designated the base accountable supply officer. He is accountable for all property at a base except as provided in AF Reg. 65-2. Other accountable officers at a base using special types of accountable records include the:

Salvage officer.

Surplus property officer.

Air installations officer.

Stock Record Cards. Accounting for the base accountable supply section is maintained on prescribed stock record cards, AF Form 105 F 1, 2, 3, 4, 5 and 6. This provides a basic record showing by items the receipt and disposal of property and the quantities and condition of the property on hand. Stock record cards are maintained on each item of property received on the base. When properly posted this card shows the location and condition of each item at all times.

RESPONSIBILITY

Responsibility is the obligation of an individual for the proper custody, care, and safekeeping of Government property entrusted to his possession or under his supervision. The

responsible individual may be held pecuniarily liable to make good any loss or destruction of, or damage to, public property. That is--if property for which he is responsible is lost, destroyed, or damaged, he may have to pay for it.

Types of Responsibility. **Direct Responsibility.** Direct responsibility is the responsibility of an individual to whom property has been entrusted and who is specifically charged with its care and safekeeping whether such property is in his possession, in use, or in storage. This may involve personal or supervisory responsibility.

Personal Responsibility. An individual has personal responsibility for property issued to him for his own use and habitually under his own care. For example, a pilot draws flying glasses from class 13. He is personally responsible, pecuniarily, for them in the event of loss, damage, destruction or misappropriation, unless and until relieved by termination of responsibility in accordance with existing regulations.

Supervisory Responsibility. Supervisory responsibility is the responsibility of an individual entrusted with the care and preservation of property in a depot, warehouse, supply office, or of a squadron. It is good practice to get a hand receipt from the user of the property when the property is away from the warehouse. The officer in charge of an operations pool is monetarily responsible for loss, damage or destruction of Government property even though property was not in his possession. Hand receipts usually place pecuniary liability on users.

DIFFERENTIATION BETWEEN ACCOUNTABILITY AND RESPONSIBILITY

If an accountable officer has supplies in his warehouse, he is both accountable and responsible for the supplies. If he issues 4 desks to the transportation squadron, he continues to be accountable for the 4 desks, but the responsibility for these desks is transferred to the transportation squadron supply officer. If 1 of the 4 desks is placed in the transportation squadron day room, the transportation squadron supply officer may get the officer in charge of the day room to sign a hand receipt or slip of paper saying that he has the desk. The accountability is still maintained by the base accountable supply officer. The transportation squadron supply officer is still responsible for the desk, but pecuniary liability could be transferred to the officer in charge of the day room, in the event of loss or destruction.

11. HEADQUARTERS R/S-AP		12. STATION Hamilton AP Base, Calif.		13. DATE 3 February 1950	
14. FINDINGS--I HAVE EXAMINED ALL AVAILABLE EVIDENCE AS SHOWN IN EXHIBITS 1 TO 3 AND AS INDICATED BELOW HAVE PERSONALLY INVESTIGATED THE SAME AND IT IS MY BELIEF THAT THE ARTICLES LISTED HEREON ARE OF ATTACHED SHEETS TOTAL COST 1. 67.72					
<p>were lost as stated. The unit was undergoing intensive operational training and large quantities of materials were being issued and used. Lt. Marlin made frequent spot checks and inventories, examined tool cribs, lockers, doors, etc., and otherwise took all reasonable precautions to safeguard the property.</p> <p>RECOMMENDATIONS: That the accountable officer be relieved of accountability; that the responsible officer be relieved of responsibility and that no one be held pecuniarily liable.</p>					
<p style="text-align: center;">J. A. JOHNSON Captain, USAF Survey Board</p> <p style="text-align: center;">3 February 1950</p>					
15. I HAVE EXAMINED THE FINDINGS AND RECOMMENDATIONS OF THE SURVEYING OFFICER ON THIS REPORT OF SURVEY AND THE EXHIBITS TO AND <input type="checkbox"/> DESIRE TO MAKE A STATEMENT WHICH IS ATTACHED HERETO <input type="checkbox"/> DO NOT DESIRE TO MAKE A STATEMENT					
DATE NAME GRADE SERVICE NO.					
16. I HAVE WITNESSED THE DESTRUCTION OF THE ARTICLES TO BE DESTROYED AND/OR RECEIVED THE ARTICLES TO BE TURNED IN TO SALVAGE					
DATE OFFICER WITNESSING DESTRUCTION, OR SALVAGE OFFICER					
17. FOR ACTION OF REVIEWING AUTHORITY ONLY					
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1. CLASS OF PROPERTY		2. STOCK RECORD ACCOUNT OR OTHER PROPERTY RECORD AND STATION		3. No.	
4. ACCOUNTABLE OFFICER (Name, rank, and designation)		5. DATE		6. No.	
Karl W. Rhoads, Col. CAP		3 July 1949			
7. ARTICLES		QUANTITY		TOTAL COST	
8. STOCK NO.		9. QUANTITY		10. TOTAL COST	
25522 Radio Set		1		\$150.00	
11. DATE AND CIRCUMSTANCES		12. FOR ACTION BY AUTHORITY OF THE SECRETARY		13. FOR ACTION BY AUTHORITY OF THE SECRETARY	
<p>Upon reporting for duty on the National Radio Net at 1930 hours, Lieut. Joseph W. Knorth, CAP, discovered that the lock and hasp had been pried from the door of Bldg. T-21, which is used as a radio lab. A complete inventory was immediately taken and the above listed property was discovered to be missing. Local police and F.B.I. authorities were notified at approximately 2100 hours, 2 July 1949.</p> <p>See Exhibits "A" through "G" attached. (Exhibits omitted from this "sample copy")</p>		<p>14. AFFIDAVIT</p> <p>I, the undersigned, do hereby certify that the above described property was lost or destroyed as a result of the actions of the accountable officer named in this statement and that the accountable officer named in this statement is not responsible for the loss or destruction of the property.</p> <p>Joseph W. Knorth, 1st Lt. CAP</p>		<p>15. CERTIFICATE</p> <p>I, the undersigned, do hereby certify that the above described property was lost or destroyed as a result of the actions of the accountable officer named in this statement and that the accountable officer named in this statement is not responsible for the loss or destruction of the property.</p> <p>J. W. Knorth</p>	
16. GRADE AND ORGANIZATION		17. GRADE AND ORGANIZATION, ACCOUNTABLE OR RESPONSIBLE OFFICER		18. PROPERTY NUMBER	
1st Lt., CAP Shadyville, Missouri		Capt., CAP, Missouri Wg, CAP		50-1250	
19. STATION		20. DATE		21. DATE	
Shadyville, Missouri		7 July 49		7 July 49	
22. SIGNATURE		23. SIGNATURE		24. SIGNATURE	
Samuel H. Tuttle		Samuel H. Tuttle		Samuel H. Tuttle	
25. SIGNATURE		26. SIGNATURE		27. SIGNATURE	
1st Lt., USAF Summary Court		1st Lt., USAF Summary Court		1st Lt., USAF Summary Court	
28. SIGNATURE		29. SIGNATURE		30. SIGNATURE	
1st Lt., USAF Summary Court		1st Lt., USAF Summary Court		1st Lt., USAF Summary Court	

Figure 5-50.--Report of Survey.

LOST, DAMAGED, OR DESTROYED PROPERTY NOT THE RESULT OF NORMAL WEAR

When Government property is lost, damaged, or destroyed, the responsible individual may:

Pay for the cost of the items or of the damage.

Initiate a Report of Survey. This is a request to have the survey board at a field investigate the loss or damages to determine the cause of loss or damage. If it is found that loss or damage was not caused by negligence on the part of the responsible individual, the commanding officer of the base under authority of the Secretary for Air may approve the report of survey if the loss is not in excess of \$100, and thereby drop the responsibility and accountability for the item. For example, the responsible officer had the property securely locked and someone forced the lock and stole the property. Loss was discovered the next day and a report was made to the provost marshal. If the findings of the survey board were that the loss was not due to negligence on the part of the individual concerned, then the report of survey would be approved and accountability and responsibility on the item would in that case be dropped. If the board found that the individual was negligent, then the board would find the individual pecuniarily liable, and when payment was made by the individual, responsibility and accountability on the item would be dropped.

CLASSIFICATION OF PROPERTY

GENERAL

Along with the increase in the complexity of supplies needed for war has come the need for a system of property classification. First of all, from an Air Force point of view, all materials are classified as either common supplies or USAF supplies. Common supplies are those which everyone in the Army and Air Force uses, such as food, which is eaten by both infantryman and air crew members, jeeps and trucks which appear alike in all types of units. Common supplies are supplied by the various technical services. The other basic classification, USAF supplies, includes all items peculiar to the Air Force, and, with a few exceptions, are procured, stored and issued by USAF agencies. The exceptions are items like

bombs procured for the Air Force by Ordnance but for the exclusive use of the Air Force, the chemical spray tanks procured by the Chemical Corps for Air Force use. In addition to this differentiation between common and Air Force supplies, classifications have been developed from 2 other approaches; first, to facilitate storage and issue and secondly, to provide categories for planning purposes.

CLASSIFICATION FOR PLANNING PURPOSES

For planning and field administration all supplies, common or Air Force, without regard for storage and issue classification are divided into 9 major classes. These are broad enough to include every conceivable item--common and Air Force. These classes are always designated by roman numerals I through V, followed by a capital A in case of the 4 special Air Force classes.

Class I. Those supplies designated as Class I include everything commonly thought of as being used in more or less the same amount every day, regardless of whether the unit is in actual combat, in a rest area, or in training. The best example of Class I supplies is rations.

Class II. Class II includes supplies and equipment, except USAF technical equipment, for which allowances are established by tables of organization and equipment, tables of equipment, tables of basic allowances, and tables of allowances or publications to which they refer such as clothing, weapons, and auto mechanic's tools. Class II A supplies include USAF technical supplies and equipment for which allowances are established and which are not included in Class II, IV, or IV A.

Class III. Class III supplies and Class III A supplies both apply to lubricants and fuel. Class III supplies are used by motor vehicles, and Class III A supplies are used by aircraft.

Class IV. Class IV consists of supplies and equipment, except USAF technical supplies and equipment, for which allowances are not prescribed or which are not otherwise classified. Construction materials and fortification materials provide a good example. Class IV A consists of USAF technical supplies and equipment for which allowances are not prescribed. Class IV A may include items of supply identical, but in addition to, those authorized in Class II A such as additional aircraft with tactical units.

Class V and V A. This class of supplies includes all items of ammunition, pyrotechnics, mines, bombs and chemicals. The items intended for air use are in Class V A.

CLASSIFICATION AS TO PERMANENCE

Expendable Supplies. Expendable Nonrecoverable Supplies. Supplies whose physical characteristics are such that they either lose their identity, or are consumed when used or cannot be economically repaired or restored after becoming unserviceable, are classed as expendable nonrecoverable supplies. These are coded "NR." Examples are paper, film and ammunition.

Expendable Recoverable Supplies. Expendable recoverable supplies are supplies whose physical characteristics are such that when they become unserviceable through normal use they can be economically repaired and restored to service. These items are coded "R." Airplane starters, generators, bearings, and vacuum bottles are good examples.

Nonexpendable Supplies. Nonexpendable supplies are supplies not consumed in use and which automatically retain their original identity during the period of use. These are coded "NX." Weapons, vehicles, tools and furniture are typical examples.

STORAGE CLASSIFICATION

Grouping Like Items. The reasons for grouping like items are:

Aid in storage.
Aid in maintenance.
Aid in inventory.
Aid in accounting.
Aid in issue.

Economy.

Groupings. Some of the USAF storage classification groups are:

Class 01 Aircraft and maintenance parts.
01-A Aircraft, complete.
Class 02 Engines and maintenance.
Class 03 Aircraft accessories.
03-A Propellers.
03-B Wheels, brakes, skis, and floats, etc.
Class 04 Aircraft hardware and rubber materials.
Class 05 Aircraft instruments.
Class 06 Fuels, lubricants, and gases.
Class 07 Dopes, paints, and related materials.

Class 08 Electrical equipment and supplies.
Class 09 Aerial targets and gliders.
Class 10 Photographic equipment and supplies.
Class 11 Aircraft combat material.
Class 12 Fuels and lubricating equipment and supplies.
Class 13 Clothing, parachutes, equipment, and supplies.
Class 14-B Prefabricated hangars and buildings.
Class 15 Technical order compliance kits.
Class 16 Communications equipment.
Class 17 Machinery, shop, tools, and warehouse equipment.
Class 18 Special tools and equipment.
Class 19 Ground servicing, special vehicle, and marine equipment.
Class 20 Aerial delivery equipment, tailored paulins, and miscellaneous aerial equipment.
Class 21 Cordage, fabrics, and leather.
Class 22 Wood.
Class 23 Metal and composition material.
Class 24 Chemicals.
Class 25 Office equipment and supplies.
Class 26 School equipment.
Class 27 Excess and surplus property.
Class 28 Synthetic and special training devices.
Class 29 Commercial hardware and miscellaneous.
Class 30 Blank forms, publications, drawings and training films.

CHEMICAL CORPS SUPPLIES

Chemical Corps supplies are divided into six storage classifications:

Class 1 Chemicals.
Class 2 Smoke, incendiary, and chemical explosive materials and equipment.
Class 3 Toxic and irritant materials and equipment.
Class 4 Weapons.
Class 5 Protective materials and equipment.
Class 6 Material handling equipment.

OTHER BRANCHES

Supplies for other technical services have similar storage classifications.

ORGANIZATION SUPPLY

SQUADRON SUPPLY

GENERAL

The main purpose of all supply activities from the highest to the lowest echelon is to make the necessary supplies available to the using organization. That organization is usually the squadron. It is the responsibility of the squadron supply to:

Issue necessary housekeeping supplies.

Issue all replacements for operating equipment.

Maintain all necessary records pertaining to the types of issue just mentioned.

HOUSEKEEPING SUPPLIES

Housekeeping supplies and replacements of organization equipment will be obtained by the squadron supply officer from the base supply officer, against authorized tables of allowances and tables of organization and equipment.

ISSUES AND TURN-INS

For issues and turn-ins the squadron supply officer must establish schedules within his squadron that will allow him to comply with the base supply officer's schedule. This is necessary, as base supply schedules will in turn be coordinated with depot requisitioning schedules to the end that all requests from organizations for issues will be received by the base supply officer prior to submission of stock replenishment requisitions to distribution depots.

Basis of Issue. For any request made upon base supply by the squadron there must be a complete basis of issue. This is very important as the base supply officer must in turn substantiate his requests made upon the higher echelons of supply. Basis of issue will normally be authorized organizational allowances specified by T/O&E, T/A, or any other directive which authorizes an organization to draw certain supplies and equipment. Should there be a change in the T/O&E, additional issues and regulated items of equipment required by the change will be made automatically by the chiefs of the technical services concerned. Additional issues of other than regulated items of equipment required by a change in the T/O&E will be obtained on issue slips from the base supply officer with the change as authorization for

issue stated thereon. In the case of an organization that does not have a T/O&E, a equipment will be drawn by the squadron supply officer. But in all cases request must be substantiated as to why the equipment is needed and the authority for obtaining it. Squadron supply officers and squadron commanders will be responsible for making certain that supplies requested are necessary and that, when received, will not cause the total on hand to exceed authorized allowances and that articles to be replaced have been disposed of in accordance with existing directives.

Equipment in excess of authorized allowances may, upon approval, be drawn from base supply on memorandum receipt. This property is on loan to the squadron supply officer who, in turn, may loan it to the operating sections on hand receipt. Memorandum receipt property (post, camp, or station property) cannot be taken by the organization on change of station without prior permission from the Department of the Army.

Memorandum Receipt Account. It is only natural that, with the large amount of property a squadron possesses, there must be a formal record of such property. Therefore the DA-AGO-446 serves as a memorandum receipt for all property issued to a squadron. This form provides squadron supply officers with a means of recording the status of each item of equipment issued to them. If data is properly entered, the supply officer will know at all times what is on hand, its exact location, what is short, and what action has been taken to rectify such shortages. It is extremely important that this record be properly maintained, because many times property which has seemingly "walked away" is still in the squadron. This is illustrated by an incident which actually happened and which could easily be repeated.

The 3rd echelon body repair shop used a portable compressor for painting vehicles. Something had gone wrong mechanically with this compressor, so while awaiting a replacement from the squadron supply, Sergeant Brown decided to borrow a portable compressor from the motor pool. This little deal was arranged with Sergeant Jones of the motor pool with the promise that Brown would return the compressor as soon as he got a replacement for his own. The next day the squadron supply officer visited the motor pool for his periodic inventory and discovered they were short 1 portable compressor. The motor pool officer immediately started making inquiries throughout his section, but he

had no luck, as Sergeant Jones was transferred that morning. The compressor might turn up when the supply officer inventoried the body shop, and this is probably what might have happened. Between both these inventories, Sergeant Brown returned the compressor without telling anyone, so it might not show up during any of the inventories of the sections and would be presumed to be lost or stolen. In that case a report of survey would be initiated. The item could actually be surveyed while still within the squadron, and even if it was not, it is easy to see that a great deal of confusion and waste of time could result from transactions of this kind.

Operating sections within the squadron should be cautioned against loaning or transferring property to each other without first clearing through the squadron supply officer. An efficient squadron supply officer will cross-check his consolidated memorandum receipt with the complete inventory he takes periodically.

Inventory. Some squadron commanders demand that their supply officers take a complete inventory every 30 days, but the exact number of inventories taken will depend on the amount of property a squadron has and also upon the number of personnel

assigned to squadron supply. It is well to bear in mind that the organization commander is responsible for all public property assigned to his command, whether he receipts for it or not. This is known as command responsibility.

Upon transfer of property to a successor, the squadron supply officer will take a joint inventory with his successor and adjust any differences which may be discovered. When responsibility for memorandum-receipt property is transferred, the 2 officers concerned must accomplish a certificate on the cover sheet of the consolidated memorandum receipt.

REPORT OF SURVEY AND STATEMENT OF CHARGES

Squadron commanders are responsible for initiating reports of survey, NME 200, in instances of loss, damage, or destruction of property issued to their squadrons in accordance with the provisions of the T/O&E. This rule applies regardless of whether property is carried on the squadron property book or in individual clothing records or both. The officer who holds property on memorandum receipt from an accountable property officer is responsible for the initiation and

We certify that we have personally counted and checked the supplies in possession of _____, Account No. _____, against the consolidated memorandum receipt dated _____ 194_, and the following exceptions were noted:

Items Over:

Items Short:

Signatures hereon by officer receiving supplies is an acknowledgment of receipt and responsibility for the supplies listed above as "Over."

Supplies listed above as "Short" have been adjusted by the officer turning over supplies; copies of adjusting papers (that is, Report of Survey, Statement of Charges, etc.) are attached hereto.

_____, 194_____

Officer turning over supplies

Officer receiving supplies

preparation of reports of survey when required even though such property may have been reissued by him on hand receipts.

It is essential that a report of survey be initiated promptly while the circumstances involved are still fresh in mind. Therefore it has been established by regulations that all reports of survey must be prepared within 30 days after the discovery of the loss, damage, or destruction of the property, unless exceptional circumstances prevent. In any such instance the reason for delay must be explained on the report of survey form. Upon completion of the report of survey, 4 copies will be forwarded to the station survey board for processing.

PECUNIARY LIABILITY

When an officer admits pecuniary liability for loss, damage, or destruction of property for which he is responsible he may make payment to a disbursing officer in accordance with the provisions set forth in TM 14-904. This action may not be taken if the damage or list price of the articles exceeds \$50 and may not be taken without the approval of the officer's immediate superior. In no case will this action be taken to purchase property in circumvention of Department of the Army policy regarding sales. (CAP personnel are similarly liable for loss, damage or destruction of Government property.)

OTHER OPERATING SECTIONS

Operating sections such as communications, photo, armament, et cetera, follow much the same basic supply procedure as the squadron supply officer does. Actually the officer in charge of each section is a unit supply officer with duties similar to that of the squadron supply officer except on a smaller scale. The section officer is responsible for having in his possession and in a serviceable condition all items of equipment authorized by the appropriate tables of allowances for his section. If items are missing he must have a satisfactory explanation. For his own protection a section officer may issue items within his section on hand receipt. He should frequently inspect all equipment to determine that it is being carefully handled. He should maintain section property records, so that he will at all times know the status of equipment within his section, what T/O&E is still owed his section, if any, and what is due as replacements for equipment turned in.

The section originally receives its equipment through normal supply channels with

the organization T/O&E as authorization for its requests. All necessary nonexpendable operating equipment and supplies are obtained by the squadron supply officer on memorandum receipt from the base accountable supply officer, unless the section is large enough to warrant a direct memorandum receipt account with the base accountable supply officer. It will depend upon the policy of base supply whether the sections will be allowed to draw expendables direct from base supply or whether the squadron will draw them and reissue to the sections.

ORGANIZATIONAL EQUIPMENT

GENERAL

Organization equipment consists of tools, accessories, and equipment authorized for using organization. It consists of the article which a unit must have to perform its functions and which it takes with it whenever it moves from one station to another. There are several tables which are used as the authority for the issue of equipment to a group or squadron. They include: tables of organization and equipment; tables of allowances; tables of clothing and individual equipment.

TABLES OF ALLOWANCES

Tables of allowances prescribe the allowances of equipment for installations organized under an allotment of personnel, such as posts, camps, bases and stations. Such tables are of interest because they also prescribe allowances of training equipment for units. This training equipment is issued in addition to the unit T/O&E equipment and cannot be taken with the unit into the field or on change of station. Tables of allowances are very similar to the equipment section of tables of organization and equipment. A table of allowance is published as a single table, subdivided according to technical services that issue the item. As stated before, it contains items of equipment normally required and issued at posts, camps, bases, and stations. The equipment listed in them is not taken by a unit upon change of station. Posts, camps, bases and stations get their personnel by bulk allotment, and they are distributed under a table of distribution. Since the allotment of personnel varies for each base, the tables of allowances are published with much of the equipment distributed according to the number of

men or planes. For example, 1 item is allowed for each 10 men, or 1 item per 5 planes. No specific total number of items is allowed. Some items are issued on the basis of so many per station and do have a total number authorized.

TABLES OF ORGANIZATION AND EQUIPMENT

Tables of organization and equipment, which will be referred to hereafter as T/O&E, prescribe the organic structure and equipment of military units, the organization, strength, and functions of which are not subject to frequent change. Groups and squadrons fall into this class.

At the time a squadron is activated, the activation orders specify the T/O&E under which the squadron is to be organized and equipped. This T/O&E then becomes the authority for issue to the squadron of all the items of equipment it lists.

STOCK RECORD ACCOUNTING

Definition. A stock record account is a basic record, showing by item the receipt and disposal of property and the quantities of property on hand, maintained by an accountable officer on prescribed forms. All



Figure 5-51.--Records are maintained on all items of supply received by a CAP unit.

Government property must be carried on a stock record account, unless some other method of accounting is specifically authorized.

Purpose. The primary purposes of maintaining a base stock record account are to:

Enable the establishment of a control over base stock control levels.

Record receipts, issues, and transfers of supplies in such a manner that the quantity on hand can always be readily ascertained; also, that the quantities so recorded will reflect an accurate statistical figure which may be used to anticipate requirements and to establish maintenance activity work levels.

Maintain a record of accountability.

Procedure. The above is generally accomplished by posting individual property vouchers directly to the stock record cards. Postings are kept current at all times, except that when issues of expendable supplies are made frequently in a single day the issues may be summarized or abstracted at least once a week to a single voucher before being posted.

Stock Record Account Numbers. Under the provisions of AF Regulation 65-90, a serial number is assigned to each stock record account to permit its ready identification and to prevent the establishment of unauthorized stock record accounts. This serial number is placed on all requisitions, receiving reports, purchase orders, shipping documents and other accountable instruments initiated by the base accountable supply officer, to which are assigned a voucher number, and which affect accountability.

Stock Record Cards. The Air Force maintains four cards for each item of stock in the base supply. These cards are fitted into a pocket of a sliding tray, which is part of a filing cabinet, so that when the pocket is opened, all of the cards pertaining to a particular item are grouped together and visible. Taken together these four cards are considered as the stock record pertaining to an item of supply. These cards are:

1. WD AAF Form 105-F-1, "Stock Control Record," which is of a permanent nature and on which are recorded the full stock number, nomenclature and description, interchangeability, locations, control levels, re-order points and other necessary information regarding the item.

2. WD AAF Form 105-F-2, "Stock Record," to which are posted all transactions affecting total accountability, such as receipts, issues and shipments of property by the base supply, and amounts of property on hand. This card

Issues and outgoing shipments should be pre-
posted to the stock record cards when prac-
ticable. However, all postings, both issues
and receipts, must be accomplished within
24 hours.

Vouchers. All postings to the stock record account are supported by vouchers, defined as an authorized property accounting document which, when properly accomplished, is required to be filed for subsequent inspection or audit in order to reflect and support the receipt, shipment, issue, transfer or disposition of property by an individual required by regulations to maintain a record of such transactions. All authorized documents which are recorded on a prescribed stock record card or form and affect a balance column are considered and processed as vouchers.

Voucher Register. All vouchers are recorded on a voucher register (Form DA AGO 272), which is the key to the stock record account and serves as the basic documentary record of transactions affecting the account. This is the only register kept for the combined purpose of recording vouchers, assigning numbers and controlling the follow-up of vouchers through all processing action, including their permanent filing. Only one voucher register is maintained for the base supply activity.

Posting. Postings to stock record cards will be kept current at all times in order that the stock record cards will reflect accurate quantities of stock on hand. Stock record cards on which postings are delinquent are of no value for the purpose of controlling stock levels or obtaining statistical data.

[illegible]

Figure 5-52.--Stock Control Record (left) and Due In and Due Out Record (right).

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Figure 5-55.--Voucher Register.

Numbering Vouchers. At the beginning of the fiscal year, blocks of numbers are allocated to each account, and the vouchers therefore are numbered consecutively, beginning with the lowest number in the appropriate block. These numbers, as they are assigned, are recorded in the voucher register.

STOCK CONTROL

GENERAL

Definition. Stock control is the supervision and control of distribution of supplies by the Army and the Air Force. Its mission is to assure that:

Adequate supplies are at the proper place at the proper time without overstocking in any echelon of supply.

There are no unauthorized amounts of supplies on hand at any time.

Purpose. The purpose of stock control is to achieve the maximum use of all stocks on hand, and to keep supplies moving in pace with requirements; to prevent creation of artificial critical shortages resulting from concentrations of "Too Much in the Hands of Too Few;" to alleviate true critical shortages by detecting impending critical shortages; to reduce overstocking and prevent the accumulation of local excesses; and to aid in projecting accurate procurement requirements.

General Considerations. In order to compute adequate quantities of supplies, it is necessary to take into account present stocks, consumption data, special requirements, length of time required for replenishing stocks, and authorized allowances.

Stock Level. Careful interpretation of actual distribution and issue experience must be utilized to insure an even flow of supplies by means of stock control levels set up at points of distribution. A stock level is the greatest quantity of material necessary

to accomplish the supply function of any echelon of supply for an authorized period of time. In some cases, special levels must be set up to form a reserve for special activities or unusual problems of distribution.

Continuous Inventories. A continuous inventory program is of paramount importance to insure accurate data on actual supplies available for distribution. Without accurate inventories, it is impossible to insure intelligent procurement and equitable distribution. Without accurate inventories and factual evidence of issues, it is impossible to compute accurate stock control levels and thereby determine requirements and excesses.

Normal Requirements. Stock control is intended to take care of only "normal requirements" for a "specified period;" requirements in excess of that period will be requisitioned from distribution depots. It is not intended that stock control be designed to take care of abnormal requirements, but rather to act as a regulator for normal procurement and distribution.

Stock Control Levels. The most important element of stock control is the establishment of accurate stock control levels. Stock control levels are requisitioning objectives. At USAF base level the authorized maximum stock level is a 60-day supply for USAF material and supply. A 60-day level is normally established for supplies of the other arms and services. These levels are the greatest quantities of supplies authorized to be "On hand" and/or "Due In" at any one time at base level. (Service stock is considered as a part of the base stock control level.) Any excess of supplies or materials over and above the prescribed 60-day level will be reported in accordance with current Department of Army and AF Directives. If stock control levels are set too high, too much will be requisitioned and excesses created; if levels are too low, not enough will be requisitioned and insufficient stock will result.

PERTINENT DEFINITIONS

Stock Control Level. A stock control level (stock level) is the greatest quantity of material necessary to accomplish the supply function of any echelon of supply for an authorized period of time.

Re-order Point. Re-order point is expressed as a fraction of the stock level. The quantity expressed by this fraction will be sufficient to assure against exhaustion of the amount on hand during the interval between the initiation of stock replenishment requisitions and the delivery of supplies.

Stock on Hand. Stock on hand is material in depots and stations, within the Zone of Interior, in a serviceable status and available for issue. Stock on hand does not include quantities listed in the "On M/R" column of the stock record card, AF Form 105B, or the "Service Stock" or "On M/R" columns of AF Form No. 105F-2.

Local Excess. A local excess exists at any activity (other than an area depot or specialized depot) authorized to maintain stocks of technical supplies and equipment within the continental limits of the United States when the quantity of an item on hand exceeds the maximum stock level set for that item at the activity.

REQUISITION, ISSUE AND TURN-IN OF SUPPLIES

There are 2 basic steps to follow in order to secure supplies in the Army and Air Force. The first is a request or requisition, and the second is a basis of authority for the request. The basis of authority was covered. This section gives the general requisitioning procedure to follow.

REQUISITION

A requisition is nothing more than a means of making known the needs for supplies or services. In the combat theater it was sometimes possible to call the service group on the field phone and say, "Hello, Joe, I need two tires and a prop for a P-51." That constituted a requisition, and in combat that kind of a requisition had some advantages in time-saving. In the Zone of Interior also there are emergency requisitions which go by telegraph or phone, but they must follow a more set procedure. There are many types of requisitions, some of which apply to only one class of supply, and some of which are used for several classes.

Ration Return. In the Zone of Interior rations are drawn on what is generally called a ration return. This is simply an abbreviated form filled out daily, usually by the mess officer, showing the actual strength for rations. It goes to the base supply officer and tells him how many men for whom he must procure food.

Expenditure Report. Another form of requisition is the expenditure report used in the Zone of Interior to procure aviation gasoline. Each base submits a daily report of consumption of aviation gasoline, and also a monthly estimate of requirements, to the

Figure 5-56.--A Requisition.

Figure 5-57.--A Requisition and Shipping Document.

Commanding General, Air Materiel Command. On the basis of these, AMC allocates the gasoline to the various supply activities. The base supply officer calls on storage facilities for delivery to the base against the established allocation.

Status of Stock Report. Still another form of requisition is a status of stock report. An example of this is the weekly report of inventory of aircraft tires and tubes submitted by the bases to the Air Force distribution depot. Like the expenditure report of gasoline, this status of stock report also includes an estimate of consumption of tires and tubes and is the basis for issue by the area depot to the Air Force stations. Regulated items are usually supplied by a status of stock report. It is an implied request which goes through command channels.

Standard Requisition. The most common and widely used method of making known requirements is the standard requisition, on which the kind and quantity of items desired are listed. WD AGO Form 445, Requisition, is used for requesting common supplies whether procured by Quartermaster, Ordnance, Medical, or some other technical service. WD AAF Form 104B, Requisition and Shipping document, is used for normal requests for USAF supplies.

Flow of Supplies. The factories of our nation furnish supplies to Air Materiel Command which in turn distributes these parts where needed on the basis of requisitions which come up from the using units.

REQUISITION SCHEDULES

Bases submit requisitions to the various distribution depots in accordance with set schedules which are prescribed by the depot. To be specific, the base at Maxwell Field may requisition Quartermaster clothing once a month on the 20th of the month or some other date as prescribed by the Quartermaster depot in Atlanta. It may requisition USAF Class 13 clothing, parachutes, etc., on the 1st and 15th of each month or as prescribed by the Mobile Air Depot. These are routine replenishment requisitions to keep the base stock built up, within the stock control levels. The supply officer prepares his requisitions for mailing so that they will arrive at the depot on the specified day as set forth by the depot. Ordinary stock rebuilding or replenishment requisitions are never sent by priority or by other than established routine methods.

Emergency requisitions may be submitted for supplies which are required immediately.

Such requisitions usually require special or emergency handling because someone did not anticipate the need for the supplies in time to requisition them in the routine way. This failure to anticipate the need sometimes occurs because of unusual circumstances, without it being the fault of anyone concerned. Each requisition of this kind must include a note telling exactly why the request is urgent and just how urgent it is. The base accountable supply officer determines the relative importance of each supply request of this type, and decides what means of requisition will be used.

SEPARATE REQUISITIONS

In requisitioning supplies not only must they be grouped together by arm and service, but also by stock classes within each technical service. Separate requisitions must be prepared for each class, subclass, or group of items as prescribed by the Commanding General, AMC, or the chief of the technical service concerned. There are other cases which require the submission of a separate requisition.

Items requiring special authorization (regulated items).

Shortage of items required for organizations alerted under preparation for overseas movement of Air POM.

Emergency requirements when it is necessary to obtain items in excess of authorized stock levels.

USAF supplies when the number of items requisitioned is more than can be written on 1 page of the WD AAF Form 104B.

SPECIAL CONDITIONS

Requisition must be complete in every detail, and there are many details. Each item requisitioned must be clearly described as to catalogue stock number and correct nomenclature. Every requisition is numbered serially by the originator, starting with number 1 at the beginning of the fiscal year July 1st. Other essential data that must be shown on a requisition are the stock control level, quantity on hand, quantities due on previous requisitions (due ins), and quantities obligated (due outs). If an air base requisitions an article from the area air depot and the depot does not have the item on hand it will make a note of that, and ship the article to the air base when it does get one. Once requisitioned the air base can count the article as "due in." Back order is the term applied

to items on a requisition which are not immediately available, but which will be supplied upon receipt by the supply agency without any further action on the part of the requisitioning unit. On submitting replenishment requisitions supply installations take into consideration these "due outs," and "due ins." The amount to be requisitioned is the stock control level plus the quantity already obligated due out minus the amount on back order due in and minus the balance on hand. Finally, each accountable supply officer has a stock record account number that must appear on the requisition. All of this data is essential on requisitions because they are the basis on which property accountability is established.

LOCAL PURCHASE

Under certain conditions some supplies are authorized to be purchased locally by regulations. Air commands or headquarters having command jurisdiction usually place additional restrictions and limitations on local purchase. For supplies requiring local purchase the base supply officer fills out a purchase request and sends it to the base purchasing and contracting officer who takes action to get the supplies. Spectacles and certain medical supplies are normally purchased locally.

STORAGE

There is some storage of supplies and equipment at air bases, but the major share of the storage mission is accomplished by the depots. In addition to the 7 area air depots there are several USAF specialized depots which handle from 1 to 5 major classes of property. These specialized depots are quite often located near a factory that manufactures the supplies stored. In addition, there are general depots scattered throughout the Zone of the Interior storing and distributing common items of supply.

How Supplies Are Stored. Having considered where supplies are stored and depots in general the next point then is how the supplies are stored within the depot. Here the problem is not an individual one to be worked out locally but should be standardized. Through technical orders, special instructions and directives the AMC has standardized the storage and issue procedure throughout its many installations, both in the Zone of the Interior and in the theaters of operations. This uniformity is obviously necessary. If each supply agency were left to its own methods they

might all be models of neatness and order and yet if a new supply crew had to take over, the supplies might as well be in one great pile unless the system is uniform and generally known. Here are some of the general rules it is well to consider:

The supplies are reasonably secure against theft, and protected from the deteriorating effect of weather, heat, light, moisture and destructive effects of bugs.

They may be readily removed for issue and shipment, and labor of handling is reduced to a minimum.

They may be easily checked and inspected for inventory purposes.

Arrangement does not interfere with the functioning of the fire extinguishing system.

They should be easily located. To accomplish this, stock location cards are kept for each difficult item which shows the building number, floor number, storage unit, section number, row number and bin number.

ISSUE PROCEDURE

GENERAL

The CAP wing supply procedure is much like the Air Force base accountable procedure in that all requisitions for supplies must be cleared through the wing supply officer or the USAF-CAP liaison officer. The Air Force system, therefore, is here given.

The base accountable supply officer does all the distributing on a base. In fact, there is only 1 accountable officer on each base and only 1 stock record account. Clothing for the men is requisitioned by the squadron from the base on a bulk requisition and then issued by the squadron supply officer to the men within 24 hours. Any items not distributed to the individuals are returned to the base accountable officer. The unit stationed on a base usually has considerable amount of organizational and individual equipment which it does not use continuously. These are items intended for use in the field. They are kept in a unit supply room. This unit supply may draw a month's allowance of soap and cleaning material from the base and parcel it out within the unit, but other than this and the clothing distribution just mentioned, the unit supply has no distributing function. Just as the base requisitions from the depots on a definite routine schedule, so does the base make distribution on a regular schedule. Emergency requests are honored

ISSUE SLIP				PAGE 1 OF 1	
BASE OR STATION ACCOUNTABLE OFFICER		PROPERTY CLASS		PROPERTY CLASS	
FROM Missouri Wing Supply Account Missouri Wing Supply Account Missouri Wing Supply Account		Wing Supply Account		Wing Supply Account	
TO Capt. Q. T. Rowe, Sqdn 701 3434 Main Street Aurora, Missouri		CAP M-1104		CAP M-1104	
STOCK OR PART NO.		NOMENCLATURE		QUANTITY	
1	2A2008	Mast, Antennae MA-8	ea	1	1
2	NL	Cable, 4-Ply	ft	15	15
3	2S522	Radio Set SCR-522	ea	5	5
4	NL	Tape, friction	roll	1	1
////////NOTHING FOLLOWS////////					
<p><i>Rowe 49</i> <i>13 July</i> <i>J.P. Knott</i></p>					
<p>FOR THE COMMANDING OFFICER: J. P. Knott Capt, CAP Sqdn 1104 13 July 49</p> <p>QUANTITIES SHOWN IN "ACTION" COLUMN HAVE BEEN RECEIVED BY THE COMMANDING OFFICER</p> <p>FOR THE BASE OR STATION ACCOUNTABLE OFFICER: J. P. Knott Capt, CAP Sqdn 1104 13 July 49</p> <p>QUANTITIES SHOWN IN "ACTION" COLUMN HAVE BEEN RECEIVED BY THE BASE OR STATION ACCOUNTABLE OFFICER</p> <p>DA 1 APR 48 4446</p>					

Figure 5-58.--An Issue Slip.

TURN-IN SLIP				PAGE 1 OF 1	
BASE OR STATION ACCOUNTABLE OFFICER		PROPERTY CLASS		PROPERTY CLASS	
TO Commanding Officer Missouri Wing, CAP Missouri Wing Supply Account Missouri Wing Supply Account		Wing Supply Account		Wing Supply Account	
FROM Kansas City Sqdn No. 3 Kansas City, Missouri		CAP M-11		CAP M-11	
STOCK OR PART NO.		NOMENCLATURE		QUANTITY	
1	2S511	Transmitter BC-745	ea	2	2
2	2S522	Radio Set SCR-522	ea	3	3
////////NOTHING FOLLOWS////////					
<p><i>Rowe 49</i> <i>31 July</i> <i>J.P. Knott</i></p>					
<p>FOR THE COMMANDING OFFICER: J. P. Knott Capt, CAP Sqdn 1104 31 July 1949</p> <p>QUANTITIES SHOWN IN "ACTION" COLUMN HAVE BEEN RECEIVED BY THE COMMANDING OFFICER</p> <p>FOR THE BASE OR STATION ACCOUNTABLE OFFICER: J. P. Knott Capt, CAP Sqdn 1104 31 July 1949</p> <p>DA 1 APR 48 4446</p>					

Figure 5-59.--A Turn-in Slip.

at any time if the stock is on hand, but normal distribution is on a set day of the week or month for different classes of supplies.

ISSUE SLIP, WD AAF FORM 81 B

Issue Slips, DA-AGO-446, are used to make requests from base supply. These issue slips are, immediately after receipt in base supply, edited for completeness, including stock number, nomenclature, authorized allowances in the case of table of allowance supplies, and quantities on hand and due in.

Procedure. The organization requesting supplies prepares the issue slip in 3 copies and signs copy number 1. All copies are submitted to the editing unit. The editing unit approves for issue by signing copies 1 and 2 and gives all copies to the voucher number and records it in the voucher register. All copies are forwarded to the stock record unit. The stock record unit checks the issue slips for the availability of items. All available items are posted as a credit to the stock record account. When possible, substitution of similar items for those not in stock is made and all other items not immediately available are posted to the due out record. Copy number 3 is returned to the voucher unit to be held in the suspense file of unaccomplished vouchers, and copies number 1 and 3 are forwarded to the warehouse unit concerned for necessary action. The warehouse unit assembles items and forwards the shipment to the distributing unit. The distributing unit issues supplies to organizations; secures the signature of the authorized representative on copy number 1 of the issue slip; signs copies number 1 and 2 to indicate that items have been issued; gives copy number 2 to the organization representative together with the property; and forwards copy number 1 to the voucher unit. The voucher unit conforms copies number 1 and 2. If changes have been made, copy number 3 is forwarded to the stock record unit for corrective posting before forwarding to the requirements unit. If no changes have been made, copy number 3 is forwarded direct to the requirements unit for action on items coded due out. The requirements unit receives copy number 3; prepares a special requisition to the distribution depot for items still required; prepares a back order release using the same voucher number; and holds the back order release in the organization's suspense file pending availability of the item. If all items are available, and none are coded due out, this copy number is then destroyed.

Variations. Certain variations are necessary in order to conform with regulations.

When similar unserviceable items have not been turned in before a request is made for replacement issue for expendable-recoverable or nonexpendable supplies, or a certificate of expenditure is not incorporated on the issue slip, a temporary receipt will be accomplished by the authorized representative of the organization pending the turn-in of similar items within three days. Issue slips covering items issued on a temporary receipt will be plainly marked and will be filed as completed vouchers. Temporary receipts will be held in a suspense file by the editing unit and will be cancelled when a like repairable or condemned item is turned in to receiving and classification.

In instances of requests for replacement issue of expendable-recoverable or non-expendable supplies, when similar unserviceable items have been turned in, the organization representative will present the receipted copy of the turn-in slip to the editor. The editor will cross reference the issue slip as follows: "Like item issued on voucher number so-and-so (the voucher number assigned to turn-in slips)."

Issue slips for nonexpendable items required for initial installation in, or repair of, a major assembly, vehicle, aircraft, et cetera, will indicate the type and serial number of the major assembly, vehicle, or aircraft, and, when available, the work order number under which the installation was or will be performed. In addition to this, a certificate of installation will be accomplished.

INSTALLATION CERTIFICATE

I certify that the ordnance supplies listed hereon will be installed on the vehicle listed above in order to make the assembly operationally complete under the provisions of War Department modification.

Signed _____
(By the officer in charge
of Installation of
Repair Shop)

Requests for supplies in excess of authorized allowances, other than emergency requirements, will be forwarded to the Chief of Staff, United States Air Force, through

command channels. Emergency requirements may be approved by the base commander.

Issue slips which may necessitate the preparation of purchase requests for local purchase, must bear a certificate, signed by an officer in authority, to indicate that the requesting activity cannot wait for the receipt of the supplies through normal supply channels.

I certify that the foregoing are required not later than (the exact date) for the following purpose: (Exact use to be made of supplies requested)

Signed _____

(Name, rank, and designation of officer making request)

Special Considerations. The base accountable supply officer accepts as correct the quantities of supplies on hand stated by organization supply officers on issue slips unless an obvious error has been made. Organization supply officers and organization commanders will be responsible for making certain that supplies requested are necessary, and, when received, will not increase the total on hand to an amount in excess of authorized allowances, and that old articles replaced by new issue have been disposed of or will be disposed of in accordance with existing directives. Approval by the editing unit means only that the issue slip has no obvious errors, such as those that could be determined by checking the organization's T/O&E allowances against the amounts requested. The signature of the squadron commander or his representative is taken as evidence that the amount requested will not exceed authorized allowances. Another important point is that base supply takes action to obtain items not available. The issue slips are registered and those which list items not immediately available are forwarded to the requirements unit for necessary procurement action. The requirements unit holds such issue slips in a suspense file until the items are received, and then releases them on a back order release. The organization does not request the item time and time again until it finally comes.

TURN-IN

GENERAL

General supplies and equipment previously issued to using organizations frequently must be turned in to the base accountable officer due to such items becoming unserviceable or being in excess of authorized allowances. Turn-in procedure, similar to other supply procedures, is accomplished in accordance with the provisions of pertinent directives and regulations.

PROCEDURE

Use of Turn-In Slip. Except when a repairable parts exchange tag is used, the turn-in slip, DA-AGO-447, will be used by organizations for the turn-in of all supplies irrespective of whether the supplies are expendable or nonexpendable, whether accountability was terminated when issue was made to the organization, or whether issue was made on memorandum receipt. This turn-in procedure does not authorize the commanding officer of an organization to be short any authorized allowances of supplies at any time, or fail to take action to obtain any part of the organization's authorized allowances of supplies, or fail to turn in items of supplies that are in excess or are no longer serviceable. This procedure will not be construed as preventing the establishment by base commanders of local regulations requiring the turn-in of remnants of expendable supplies before additional expendable supplies are issued.

Turn-In and Replacement. The turn-in of unserviceable items and the obtaining of a replacement need not be a simultaneous transaction. The transaction of turning in supplies, irrespective of the reasons for the turn-in, will be a separate and distinct transaction from that of obtaining reissue of the same or similar supplies. The basis for the turn-in will be stated in the "Remarks" column of the turn-in slip; that is, either "FWT," "R/S," or "S/C," whichever is applicable, for unserviceable items, and either "SER" or "EXS," whichever is applicable for serviceable items. The commanding officers of organizations will have recorded in the required property records of the organization all property transactions whether turn-in or issue that result in a net change in the property records, and will be held responsible for the correctness of these records.

Separate Turn-In Slips for Each Class of Supplies. Separate turn-in slips will be prepared for each class or subclass of USAF

supplies and for each technical service of USA supplies. Separate turn-in slips will be prepared for serviceable and unserviceable supplies and for memorandum receipt items. Turn-in slips will be prepared in triplicate and the original will be signed by the supply officer of the organization or his authorized representative turning in the supplies. Storekeepers will receipt for quantities turned in in the space provided on the form. All items turned in will be tagged in accordance with AF Regulation 15-50.

CENTRAL RECEIVING AND CLASSIFICATION UNIT

Establishment. A central receiving and classification unit will be established whenever practicable. The physical location of this unit will be as near as facilities permit to the geographic center of base supply storage and issue activities, and if possible, adjacent to the central distributing unit.

Turn-In Supplies Processed Through Unit. All supplies turned in, both serviceable and unserviceable, except complete airplanes and vehicles, will be processed through the receiving and classification unit before being forwarded to the serviceable or reparable storage warehouse or being processed to reclamation or salvage.

Function. The receiving and classification unit will be responsible for insuring that the supplies received are properly counted, identified, tagged and checked for accomplishment of necessary paper work to effect routing to the proper storage location or to reclamation or salvage.

Verify Condition of Serviceability. All supplies received by the receiving and classification unit will be inspected by the supply inspector for the purpose of verifying and completing the identification information entered on WD AF Form 50B, Serviceable Part Tag, WD AF Form 50D, Reparable Part Tag, or WD AF Form 50E, Condemned Part Tag. If tags become detached or lost, the supply inspector will attach an appropriate tag, with proper identification thereon. These supplies will also be inspected by a technically qualified inspector for the purpose of verifying their condition status (that is, serviceable, reparable, or condemned) and to see that they are properly conditioned and identification tagged.

Disposition of Supplies. After inspection by the receiving and classification unit, all serviceable supplies will be forwarded to the serviceable storage warehouse concerned, all reparable supplies will be forwarded to

the reparable storage warehouse, and all condemned items will be processed to the reclamation officer or salvage officer.

TURN-IN AND EXCHANGE

WD AF Form 50A, Reparable Part Exchange Tag, may be used when reparable parts, assemblies, subassemblies, tools, jigs, dies, etc., are rendered unserviceable through fair wear and tear, and are turned in for replacement. The use of this form to turn in reparable items for which replacement is required, makes unnecessary the preparation by the organization or activity concerned of any additional documents to identify the item, to complete the turn-in transaction or to receive replacement therefor.

MEMORANDUM RECEIPT TRANSACTIONS

The memorandum receipt account reflects the total balance of property issued on loan to responsible officers for which the base accountable supply officer maintains accountability. Memorandum receipt property includes all nonexpendable items issued. These are issued on an issue slip and are turned in on a turn-in slip as are all supplies, but if the issue slip and the turn-in slip are to be used as memorandum receipts they are so marked and properly posted. The base accountable supply officer maintains a jacket file of memorandum receipts for each responsible officer with whom he has an account. Each responsible officer also maintains a jacket file of all memorandum receipts affecting his own account. The account of each responsible officer is identified by an account number assigned by the base accountable supply officer. Consolidated memorandum receipts will be prepared by the base accountable officer for each responsible officer every 6 months and whenever there is a change of responsible officers.

REFERENCES

- CAP Reg. 65 Series Supply and Maintenance.
- CAP Reg. 77 Series Motor Vehicles.
- AR 35-6520 Property Accountability and Responsibility.
- AF Manual 67-1 AF Supply Manual.
- FM 100-10 Field Service Manual Administration.
- TO 00-35A-1 Classification of AF Equipment and Supplies.
- TO 00-35A-1A Classification of AF Equipment and Supplies.

TO 00-35A-8 Air Force Stock Numbering System.

TM 14-904 Accounting for Lost, Damaged and Destroyed Property.

AIR INSPECTOR

INTRODUCTION

The word "inspection" is defined as a critical examination. In actuality we find that inspection has formed a part of every individual's personal life. His actions have been constantly examined by many different individuals, in the home, in the school, and in the business world. The results of these many critical examinations or inspections have been felt by the individual in many ways. Censure, reprimand, praise, advice and promotion are a few of the aftermaths that have resulted from information gained from these inspections.

Business concerns utilize inspection procedures to further the interests of the organization. Every supervisor or manager utilizes inspection techniques when he examines the results obtained from the efforts of his subordinates. In the larger organizations we find individuals being employed whose only function is that of inspection. They may not be called inspectors directly, but they are performing the job of inspection. Their job is a necessary one because the executives in control of the organization cannot spare the time from their supervisory duties which would be necessary so as to critically examine the work of their subordinates. Yet, the responsible executive must at all times be fully aware of the status and efficiency of his organization.

Likewise, in the military establishment it is imperative that the commander fully realize the operating efficiency and status of his organization at all times. This specialized program of inspection is necessary because it is impossible for the majority of commanders, without detracting from the direction of the over-all effort, to determine whether each part of his machine is functioning correctly.

WHY AN INSPECTION PROGRAM

The need for an inspection program in the conduct of civilian organizations and in a military organization has already been discussed in general terms. To become more specific, how can the question "why an inspection program in the Air Force and why so extensive" be answered. In the military organization it is safe to assume that no

organization is planned and no function performed except in answer to a need. What is the need that caused the organization of inspection sections?

The expression "the commander is always responsible for his organization, what it does, how it does it, and what it hasn't done" will always be a principle of organization. Since he is responsible it is imperative that the commander realize at all times the operating status and efficiency of each minute segment of his organization. To gain this knowledge it is necessary that inspection techniques be used continually. However, it was found that commanders could not spare the time necessary from their command responsibilities to efficiently perform the painstaking duties that were involved in an efficient inspection program. The need was felt for an independent section that could relieve the commander of the greater portion of his inspection duties. The various inspection sections were, therefore, organized and made responsible to the commander directly. They became to a certain extent the second pair of "eyes and ears" of the commander.

However, aside from this primary need for an inspection section in the organization we find other secondary needs becoming apparent. Supervisory personnel on many occasions required advice and interpretation as to the best method of accomplishing their duties in the organization. This information, of course, could be obtained from the commander, but here again we find that the time and effort of the commander should be devoted to rendering decisions instead of explaining mechanical details to his subordinates.

From time to time individuals in the organization feel that they would like to present a grievance or personal problem to their commander, either for his information or advice as the circumstance warrants. Here again we would find the commander, except those in the smaller echelons, being burdened by details, if he had to handle the problems of the individual.

In summarizing, it can be stated that the "inspection section" at any echelon answers the needs of the organization as follows:

a. An agency that can provide the commander with unbiased information on the status of his organization and the operating efficiency of any part thereof.

b. An agency that can provide or obtain correct interpretation of directives.

c. An agency that can advise the supervisory personnel in the organization on matters of an official nature in line with accepted doctrines and decisions of the commander.

d. An agency that can receive grievances or information from any individual member of the organization and take action on the matter or process such information to the commander.

THE AIR INSPECTION SYSTEM

The Air Inspection System is the workable solution in the Air Force to meet the needs that have been discussed. Air Inspection sections of various sizes and structures are found at all echelons of command from Headquarters, United States Air Force down to and including the present wing organization. These sections will also be noted in smaller organizations when independently stationed in the field. Air inspection doctrines and policies are covered in current Air Force regulations and other directives and informational material.

The entire structure of the various inspection sections is built upon the premise that, "the mission of the organization will determine the structure of the inspection section." An organization having a training mission will employ more tactical or training inspectors than will a materiel organization. The latter organization will have more technical and supply inspectors than tactical or training inspectors.

Authorization for inspectors will be found in Tables of Organization and Equipment or Manning Tables, whichever is applicable to the organization concerned. The commander must realize that there are always certain factors or influences which ordinarily possess a potential capacity to interfere with or detract from the efficiency of the operations of the unit, and of the many departments and sections that make up the unit. Trained specialists must be available to the commander to detect these factors and influences before they have had an opportunity of detracting from the efficient accomplishment of the mission of the unit.

The current conception of the mission of air inspection is that it is "a means of determination for the commander of the state of efficiency and economy of his organization." Air Force regulations break down this concept into fields of minute responsibilities and procedure. Let it be emphasized, however, that the inspection system is not looking

only for irregularities and deficiencies but is desirous of being of help and assistance to all. Inspectors at all echelons are available and desire to help individuals in the organization so that they can better perform their jobs. In this concept of inspection there is also included the thought that the agency is looking for good and efficient work just as it is looking for deficiencies and irregularities. The agency has the means of conveying such information to the commander. In addition the agency is in a position to disseminate information regarding an efficient process utilized in one part of the organization to all other parts so that the entire organization can benefit from the experience of a few members.

The inspection system grew out of the need of the commander for an agency that could determine for him the operating efficiency of his unit. It, therefore, follows that the inspection section at any echelon of command be responsible only to the commander concerned. It is only by having this relationship with the commander that the inspection section will be able to furnish him with truthful and unbiased information on all activities of the unit. Every commander or prospective commander should fully understand the spirit behind all inspection procedures and understand how inspection can help him do a better job of supervising his organization. This knowledge will come from a study of inspection doctrines and principles together with his personal experiences with inspectors and their routines.

It is difficult in a work of this nature to fully describe what might be a typical air inspection section. As has been stated, the structure will depend on the mission of the unit concerned. The section will have assigned to it individuals of varying technical qualifications in sufficient numbers to insure that the mission of the section can be accomplished. Normally, there will be a sub-section which assumes the duties of stenographic work, filing, publications, reports, records, janitor service, etc. The "administrative" sub-section is assigned the duty of inquiring into all administrative matters pertaining to the command. The "supply and maintenance" sub-section, likewise, is responsible for inquiring into all matters pertaining to all classes and functions of supply together with maintenance of all types of equipment. The last major breakdown of the section is into a "tactical or training" sub-section. This section handles all phases of inspection work dealing with individual or unit training together with such tactical inspections that are

not conducted by the commander himself. Each of these sub-sections can be broken down into smaller sub-sections as the situation warrants. Any air inspection section will be organized in such a way that the commander will be assured that each segment of his command is covered by such inspectors and inspection procedures so that he can be kept informed of their operating efficiency.

The section is under the supervision of a commissioned officer known as the "Air Inspector." The commander will endeavor to select for this position an experienced individual. This is important because the air inspector must be able to assimilate the plans, policies and doctrines of the commander so that his interpretation of directives will parallel that of the commander. The air inspector must be able to look at a problem as it arises, as the commander would look at the problem if it were brought to his attention directly. Much has been written on the personal qualifications of this individual. A possible condensation would be to say that this individual has the qualities of any good staff officer, for he is a member of the commander's personal staff.

The balance of inspection personnel will be divided between the commissioned, warrant and enlisted categories. Their primary qualifications will be that of experience and training along a specific specialty or closely allied specialties. These are the individuals who actually accomplish the inspection procedures. Therefore, they must be well versed in the techniques of inspection.

Personnel will normally be selected by the classification or personnel officer and tentatively assigned inspection duties after an interview with the air inspector. Over and above this routine procedure, it can be assumed that the commander is always seeking to retain or obtain the best available inspection personnel.

The duties assigned to the inspection agency will generally fall into two categories: first, those directed by the commander and second, those indicated in pertinent directives from higher headquarters. The commander will designate the field of endeavor where he wishes the greatest effort to be placed, bearing in mind that emphasis must be placed on those factors that vitally affect the accomplishment of the mission of the unit.

Directives from higher headquarters will usually be of a general nature though many detailed directives will be published from time to time. Higher headquarters will also designate fields of endeavor where inspection emphasis will be placed.

WRITING THE INSPECTION REPORT

There is no cut-and-dried system for proper report writing, yet poor report preparation is one thing which, in a matter of minutes, can destroy days of good practical inspection work. Whatever the capabilities or limitations of the inspector, the written work is an irrevocable matter of record and once written cannot be modified by a hasty verbal correction.

It is a function and a responsibility of the Air Inspector to insure that all reports leaving his office are properly written; contain only factual statements; are clear, concise, possible of only one interpretation; contain proper, well considered recommendations for correction of unsatisfactory conditions; and present a true picture of the efficiency and economy of command operation.

Form of Inspection Report

The form of inspection report used will be that prescribed by the commander ordering the inspection. Several types of reports are currently in use by Base and Group Air Inspectors. However, for purposes of illustration, the specimen Inspection Report Form (figure 3) will be considered in this lesson.

The "HEADING" is self explanatory, being in accordance with Technical Manual 12-252.

The "SUBJECT" of the report should show the type of inspection, the activity inspected and its location.

The "THRU" of the report should show the intermediate channel or channels through which the report must pass to reach the commander ordering the inspection.

The "TO" of the report should show the designation and address of the Commander ordering the inspection.

General

When a commander receives an inspection report, it should immediately tell him the type of inspection, the activity inspected, the location of that activity, when the inspection was conducted, by whom and the authority. This information should be included in paragraph 1.

The date and result of the last inspection of the activity should be shown in paragraph 2, Section I, in order that the commander may see what changes if any, have taken place.

The names of the officer-in-charge of the activity inspected and the intermediate department head together with the length of

time each has been assigned should appear in paragraph 3, Section I, for use in determining responsibility regarding conditions, good or bad, revealed as a result of the inspection.

Section I of the report should be used, essentially, to furnish the basic information, in brief, necessary for clarification of the following sections of the report.

Irregularities, Deficiencies and Recommendations

One of the main troubles encountered with inspection reports is the tendency of Air Inspectors to confine their entries in this Section to detailed findings rather than presenting the over-all situational causes. When only detailed findings are submitted, the commander must then determine over-all conditions for himself, based on those detailed findings. Often the situation is incorrectly estimated and improper, ineffective corrective action prescribed under these circumstances. Proper reporting involves presenting a statement of the over-all situation, followed by enough of the detailed findings to substantiate that statement.

Each paragraph under Section II of the formal report listing a major irregularity or deficiency, should be followed by a recommendation for corrective action except where the proper procedure is definitely covered by a regulation and the only possible recommendation would be to comply with the requirements of that particular regulation.

Conclusions

This section of the report should be used to summarize the over-all condition of the activity revealed as a result of the inspection. Pertinent comments and remarks regarding any extenuating circumstances or other factors effecting the efficiency and economy of the activity's operation are proper entries under this section. In addition, the results of any special checks such as the state of compliance with National Military Establishment and USAF Special Subjects should be recorded. Finally, the over-all rating accorded the activity should be entered.

In any case where the rating accorded is SATISFACTORY or less, the summary at the beginning of this section should present definite evidence substantiating such a rating. The omission of this information from inspection reports has caused considerable friction and misunderstanding in the past. Ratings of this type MUST be justified.

Processing

Experience has taught that when definite instructions are not furnished, inspection reports are apt to wind up anywhere from the wastebasket to Headquarters, USAF. Therefore it has become necessary to add this section to the formal report. Contents should clearly indicate the required routing of the report together with the period of time permissible for preparation of the indorsement and forwarding to the next higher headquarters. When specifying suspense dates in this section, care must be exercised to permit sufficient time for the initiation of corrective action and the preparation of indorsements covering this action. Again, common sense is the governing factor.

Since the Air Inspector is responsible for the complete operation of the Air Inspection Section, all reports emanating from that section should bear his signature. This procedure will insure that reports are not forwarded to his commanding officer without the Air Inspector's knowledge of their contents and will further insure that all reports furnish the commander with that picture so essential for proper maintenance of a commander's responsibilities.

What the Inspection Report Should Tell the Commander

Here are a few of the more important things every over-all inspection report should tell the commander with briefness, clarity and with tolerance and understanding, together with helpful suggestions, recommendations for correction, improvement and proper maintenance:

Is the administration of my command satisfactory?

Have I an adequate security system--good exchanges--special services section?

Are my men well fed--state of morale and discipline satisfactory?

Training programs producing soldiers? Subordinate leadership satisfactory?

Is proper and immediate medical attention available?

What is the command record for court-martial and company punishment?

Is personnel classification and duty assignment efficient and proper?

Are civilian employees adequate or excessive? Properly utilized?

Are funds handled in accordance with existing regulations?

Is the staff well coordinated, cooperative and competent?

Are aircraft adequate, authorized, properly utilized and maintained?

Are maintenance systems properly established and efficiently executed?

Are supplies and equipment safeguarded and utilized? Quantities on hand conform to authorized allowances? Necessary supplies and replacement parts actually reaching the using echelons?

IS THE OPERATION OF MY COMMAND EFFICIENT, ECONOMICAL AND SATISFACTORY?

In the final analysis, the evaluation of any report is dependent upon the clarity of the written work. Every inspector, therefore, must continually strive to attain the highest possible standard of report preparation.

OBSERVE	--	Intelligently.
COUNSEL	--	Constructively
REPORT	--	Objectively.

BENEFITS OF INSPECTION

What can be said of the value to the organization of the inspection section? What benefits are derived by the organization as a result of the organization and functioning of the air inspection section?

A composite picture of any inspection section would reveal a group of trained and experienced personnel who, either as individuals or as a group, are qualified to critically examine all functions of the command to which they are assigned.

These individuals have access to a well equipped library of information containing both directive and informational material. This library will be kept up to date as changes in policy, doctrine and procedure are received by the headquarters to which the section belongs.

The section maintains close liaison with the inspection section of the next higher headquarters. Through this liaison it is possible for the section to obtain advance information on matters to come. Matters of interpretation can also be handled by means of this liaison. It is well to emphasize, however, that information received through inspection channels cannot be construed to be "directive." Directives to be effective must be received through command channels.

The inspection section is provided in the military organization to serve that organization. Members of the organization, as individuals, have the right to present to the Air Inspector or one of his assistants such grievances or other information as they feel should come to the attention of the commander. In this respect the agency acts as a "clearing

house." Many grievances can be settled by discussion, or other corrective action can be taken or recommended by the agency. Matters that cannot be settled in this manner will be referred to the commander for his action or information. Aside from this function of receiving grievances or information from the individual this agency is in a position to give advice and help on other matters either personal or official.

The various supervisors in the organization are, likewise, served by this agency. One of the applicable services is in the form of interpretation. Any supervisor, or for that matter, any member of the organization, can obtain an interpretation of a directive, policy or doctrine in which he is interested. The agency may be able to make the interpretation itself and, if not, it has the outlet for obtaining such interpretation from the commander or higher headquarters. This agency is available to give any supervisor advice or information on matters pertaining to the supervisor's duties, either when that individual assumes the duty or during the course of his administration.

This agency also provides the commander with service as indicated above. In addition it provides the commander with true and unbiased facts pertaining to the efficiency and economy of the operations of each component part of his organization. This information will consist of facts relative to inefficiencies, deficiencies and irregularities as well as facts pertaining to efficient processes and duties well done by members of the organization. The commander will be informed of efficient processes and procedures utilized in one section so that the processes if applicable can be utilized in other sections or departments of the organization.

The commander upon receiving this information can immediately institute corrective action if such is indicated. Other facts of an informative nature will keep him constantly aware of the over-all condition of his unit.

SUMMARY

The inspection system at any echelon of command is an additional tool that is provided the commander so that he can better control and supervise his organization. It is essentially a fact-finding agency for the commander but at the same time it serves each member of the organization by providing information, interpretation and advice on both official and personal matters. The agency is an inherent part of the organization and it serves the organization as a whole.

THE CHAPLAIN

In the military organization, the Chaplain serves the religious and moral needs of the entire personnel of the command to which he is assigned. Within the limits of law, regulations, and orders, he enlists such active aid and cooperation of military and civilian personnel, both lay and clerical, as needs of the command may require, or the commanding officer may direct.

Thus, the Chaplain will hold or be accountable for appropriate religious services in all denominations required for the command. In order to so provide, the Chaplain must maintain cordial relations with Protestant Ministers, Catholic Priests, or Jewish Rabbis. He may use the services of other clergymen to provide the personnel with spiritual guidance in keeping with their faith. He may refer military personnel to civilian churches for services if he is not qualified to serve them because of the ecclesiastical laws of his or their church.

In addition to the moral religious services, the Chaplain will organize and supervise other services and observances such as: Sunday School, Bible classes, missions, instructions, and similar activities.

He will perform marriages, administer the Rite of Baptism, and officiate at funerals. He is to do all within his power, by lecture and precept, to promote the religion, morals and morale of the command, and to cooperate with all existing agencies toward the accomplishment of that purpose.

There is another aspect to the Office of the Chaplain. That is the Chaplain as a member of the Air Force, a fully recognized military person. He is an officer specifically trained to aid the commander in the commander's job of accomplishing military tasks.

The Chaplain must be "... regularly ordained, duly accredited, and in good standing with some religious denomination or organization which holds an apportionment of chaplain appointments in accordance with the needs of the service..." He must be "... actively engaged in the ministry as the principal occupation in life and credited with 3 years experience therein." In addition, most of the major religious denominations are very specific in the educational requirements for their prospective clergymen. A four year college course with a degree, plus three years of graduate study in a theological seminary are usually required before a man can

become an Ordained Clergyman. The prospective Chaplain must be, in addition, recommended for military service by his Church Denomination by means of an Ecclesiastical Endorsement. The Church retains its power and right to withdraw its Endorsement at any time the Chaplain compromises his position as a clergyman, representative of his church or brings discredit upon the Chaplain Corps.

In addition to the professional qualifications of the Chaplain which include legal, educational, and psychological training, the requirements for personal qualities and attributes of the Chaplain are as rigid as for all officers of the service.

Unit commanders should be careful about the diagnosis of spiritual and moral disorder among their personnel. It can and does limit the operational capacity of the unit. The services of a specialist in that field are provided in the Office of the Chaplain. He should be directed to undertake a "preventive maintenance" program in order to maintain the highest efficiency of troops on a continuing basis. He should be used to prevent spiritual disorder, moral decline and the inefficiency attendant thereon before it becomes a fact.

The Chaplain then has a twofold function. First, he is a clergyman in uniform who is a representative of a civilian church, in which function he performs identical duties that he would perform in a civilian parish as a clergyman. Second, he is a special staff officer, advisor to his commanding officer, who renders service to the commander in the commander's position as the individual who is responsible for the unit's capacity to execute military tasks.

Most units will find a Chaplain a valuable addition to their organization, and nearly all of them can find a suitable candidate within their own communities or even within their own ranks.

Clergymen who are Reserve Officers should welcome the opportunity to serve for there are few other assignments by which they may obtain reserve credit. The CAP chaplain, however, need not be a Reserve officer, though he must be accredited by his own church

REFERENCE

AR 60-5 and AR 605-30.
CAP Reg. 45-Series Air Force Reserve.

COMMUNICATIONS

A properly organized and operated communications system is the nerve center of any command. Today it provides our armed forces with all-seeing eyes, incredibly acute ears, and a voice which will carry any desired distance. The military airman is helpless without it. Civilian flyers should become familiar with whatever communication facilities are at their disposal. Communications increase both the convenience and safety of their flights.

In order to adequately describe CAP communications it is necessary to cover both normal and emergency types of operation. To be effective in times of emergency it is necessary that essential equipment and personnel be kept in a constant state of preparedness. To accomplish this, wing communications officers direct programs which assure the use of all communications facilities in the regular conduct of Civil Air Patrol business, and requires the necessary familiarization with equipment and special frequencies that are to be placed in operation during emergencies.

The responsibility for signal communication is a command function. To aid him in fulfilling his duty, each commander is provided a communications officer, and in some cases, a signal officer, who are specially trained in signal communications. Each of these officers exercises responsibility over the communications system within the organization and in addition has certain direct duties.

Duties of the Communications Officer-- 1. Preparation of training programs in communications for his unit and subordinate units according to general policies laid down by Commanding Officer.

2. Preparation of routine and operational orders relating to communications. (Coordination with Staff.)

3. Determination of requirements, procurement, storage and distribution of communication equipment and supplies.

4. Procurement and operation of communication maintenance and repair facilities.

5. Technical inspection of communication equipment within limits prescribed by the Commander and technical supervision of communication operations of the command, including coordination of the employment and of the training of communication agencies of subordinate units. (Coordination with S-3 on general training program and for general operational matters.)

6. a. Supervision of the installation, maintenance, and operation of the communication system, including the message center of the unit.

b. Responsibility for strict compliance that all radio communications are within the prescribed regulations of the Armed Forces,

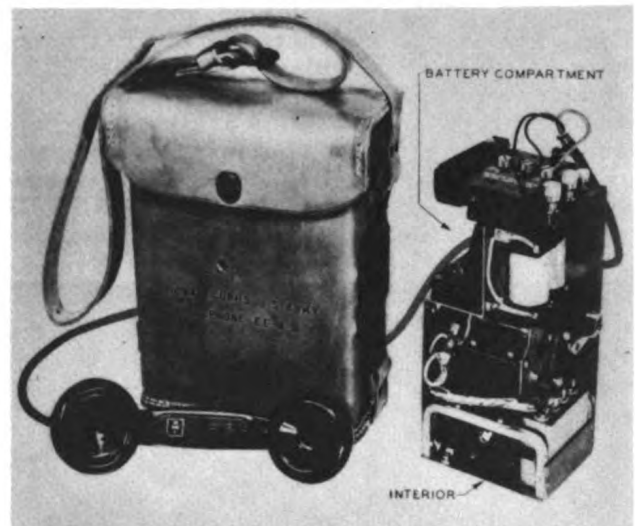


Figure 5-60.--A Field Telephone.

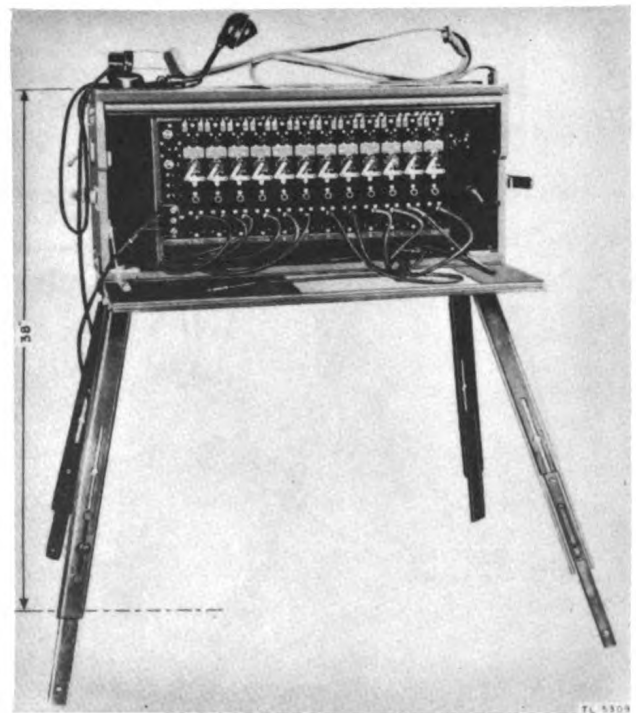


Figure 5-61.--A Headquarters Switchboard.

CAP, and Federal Communications Commission.

c. He will keep a complete file on all FCC directives pertinent to communications operation in the Squadron.

The different means of communication and how they apply to the CAP program may be briefly outlined as follows:

Wire Communication--The primary means of conveying messages between points on the ground is by the use of instruments such as telephone, telegraph, teletype, and facsimile. Civil Air Patrol conducts its normal business by the use of regularly established lines of commercial companies. Some telephone and telegraph equipment is available for use during field exercises, but no effort is made to duplicate existing facilities already established by these commercial companies. Teletype and facsimile equipment have been de-

veloped for training purposes and although few in number are in strategic locations for emergency use.

Radio Communication--Radio is a means of communicating between aircraft in flight between aircraft and ground stations; and between ground stations, mobile or fixed. Transmission may be by CW (code) or voice, and low frequency, high frequency, or very high frequency may be used. Each CAP wing is equipped with one SCR 399, a relatively high-powered communications radio set which may be used either as a fixed or mobile station. The maximum output is approximately 500 watts which will provide communications over a range of more than 100 miles. This set is used as the net control station for the future networks, and when used by National Headquarters it may also serve as net control station for the region

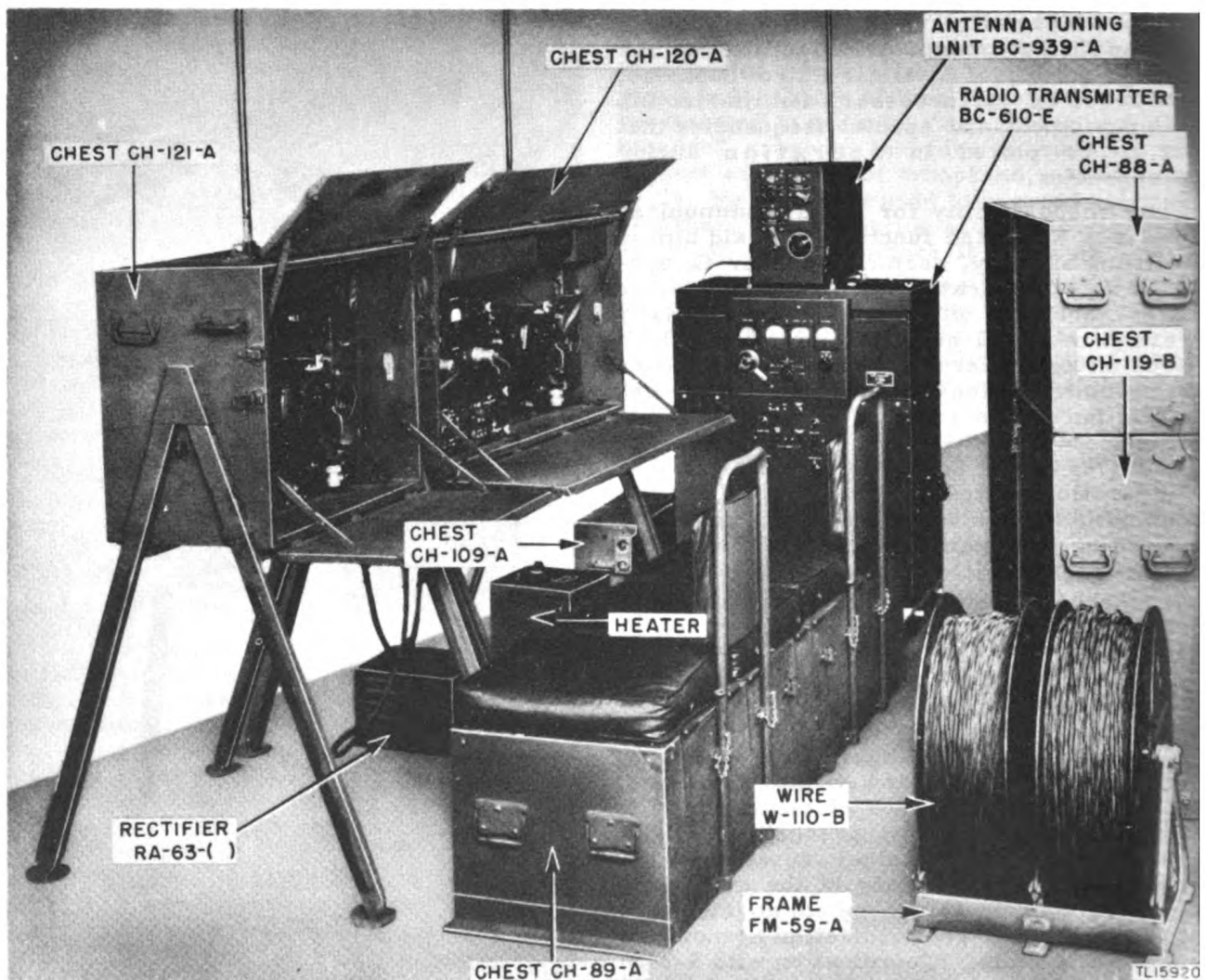


Figure 5-62.--SCR 499 Communications Set.

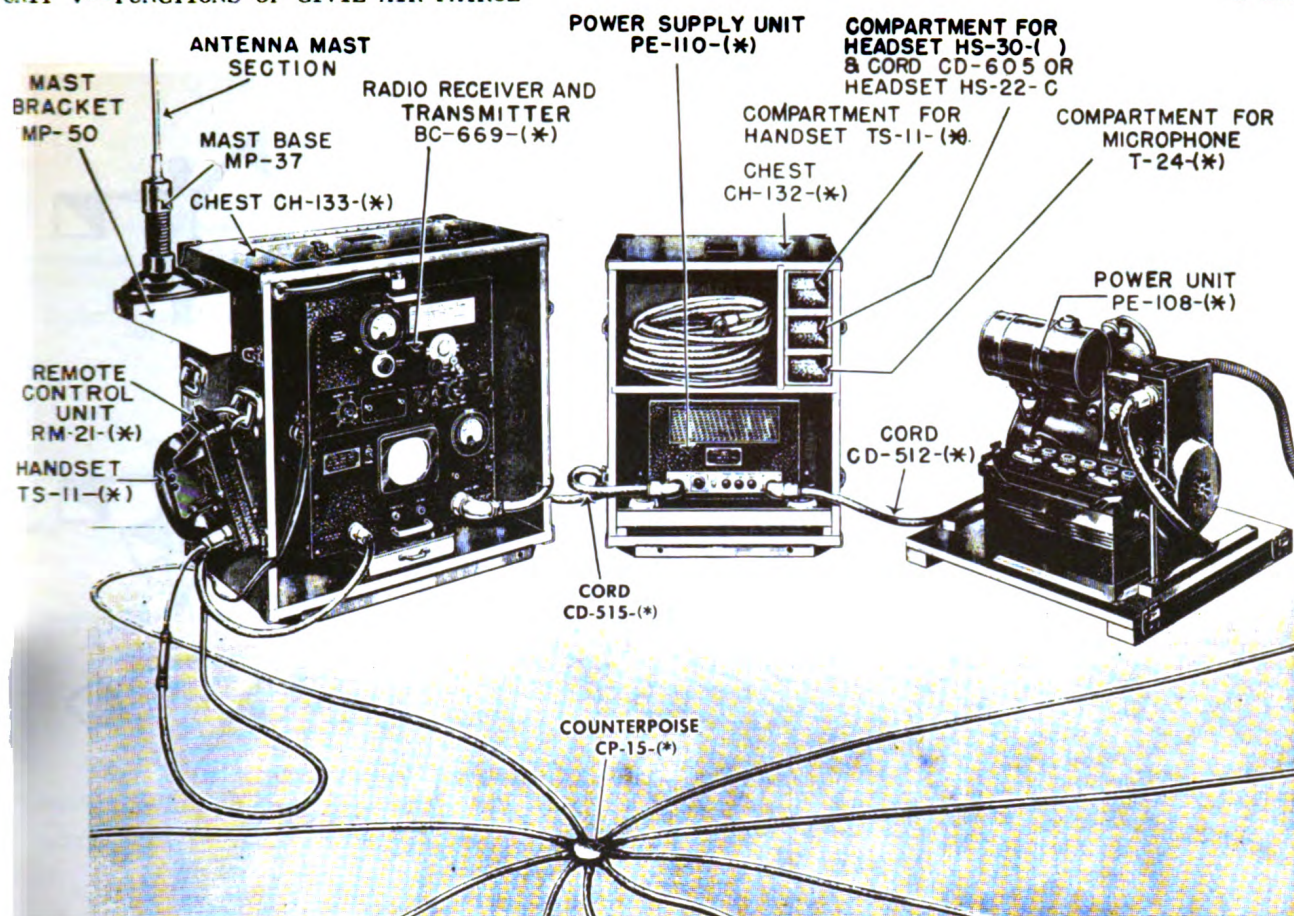


Figure 5-63.--SCR 543 Communications Set.

Groups and squadrons are equipped with an SCR 543 or its equivalent, a medium-powered radio communications set which may be used either as a fixed or mobile station. The maximum output is approximately 45 watts with a range up to 100 miles. The SCR 522 is a low-powered communications radio set which operates on a very high frequency and may be used as a mobile unit or installed in aircraft. It also serves as an excellent land station. The minimum output is approximately 20 watts. This set is used at all levels within the wings and when properly located within the state network furnishes dependable communications facilities. Light, portable mobile units are essential in the Search and Rescue Program and under other emergency conditions. For this work the SCR 511 is used. A very low-powered lightweight portable radio set which may be carried by one man with ease. The maximum output is approximately 1 watt with a range up to 10 miles. This radio set has been carried aloft in aircraft and used effectively in coordinat-


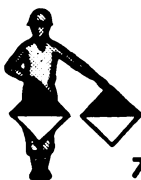
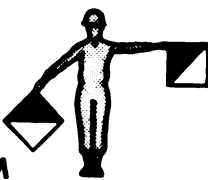
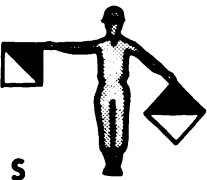
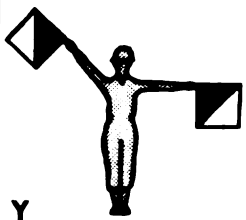
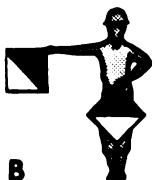
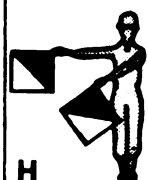
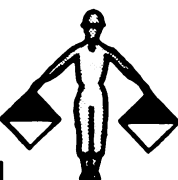

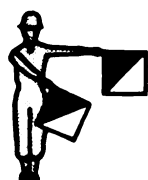

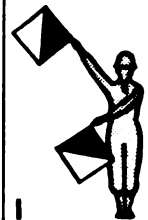
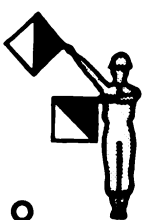

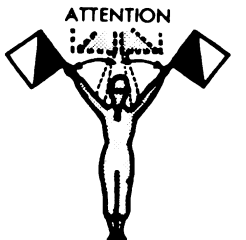







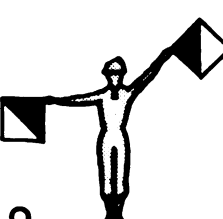







ing with ground operations.

Serviceable donated equipment in many cases has been converted into transceivers and installed in motor vehicles belonging to CAP units or members, thereby increasing the number of portable sets which will be ready for instant service and can be easily moved to the desired location.

Visual Communication--Auxiliary means of communicating, supplementing wire and radio, are dependent upon the character of the emergency, the terrain and the weather. Panels, signal lamps, pyrotechnics, hand signals, airplane maneuvers and mirrors are used when normal communication facilities are not available.

Sound Communication--This means of communication is used primarily for alarms, attracting attention and for transmission of short pre-arranged messages and orders. The chief instruments of sound communication are whistles, bugles, small arms, artillery, horns and sirens.

SEMAPHORE CODE

A 	1 G 	M 	S 	Y 
B 	2 H 	N 	T 	Z 
C 	3 I 	O 	U 	ATTENTION 
D 	4 J 	P 	V 	INTERVAL 
ERROR (REPEATED SEVERAL TIMES) 	K 	Q 	W 	NUMERALS FOLLOW 
F 	6 L 	RECEIVED, OR GO AHEAD 	X 	END OF MESSAGE (REPEATED SEVERAL TIMES) 

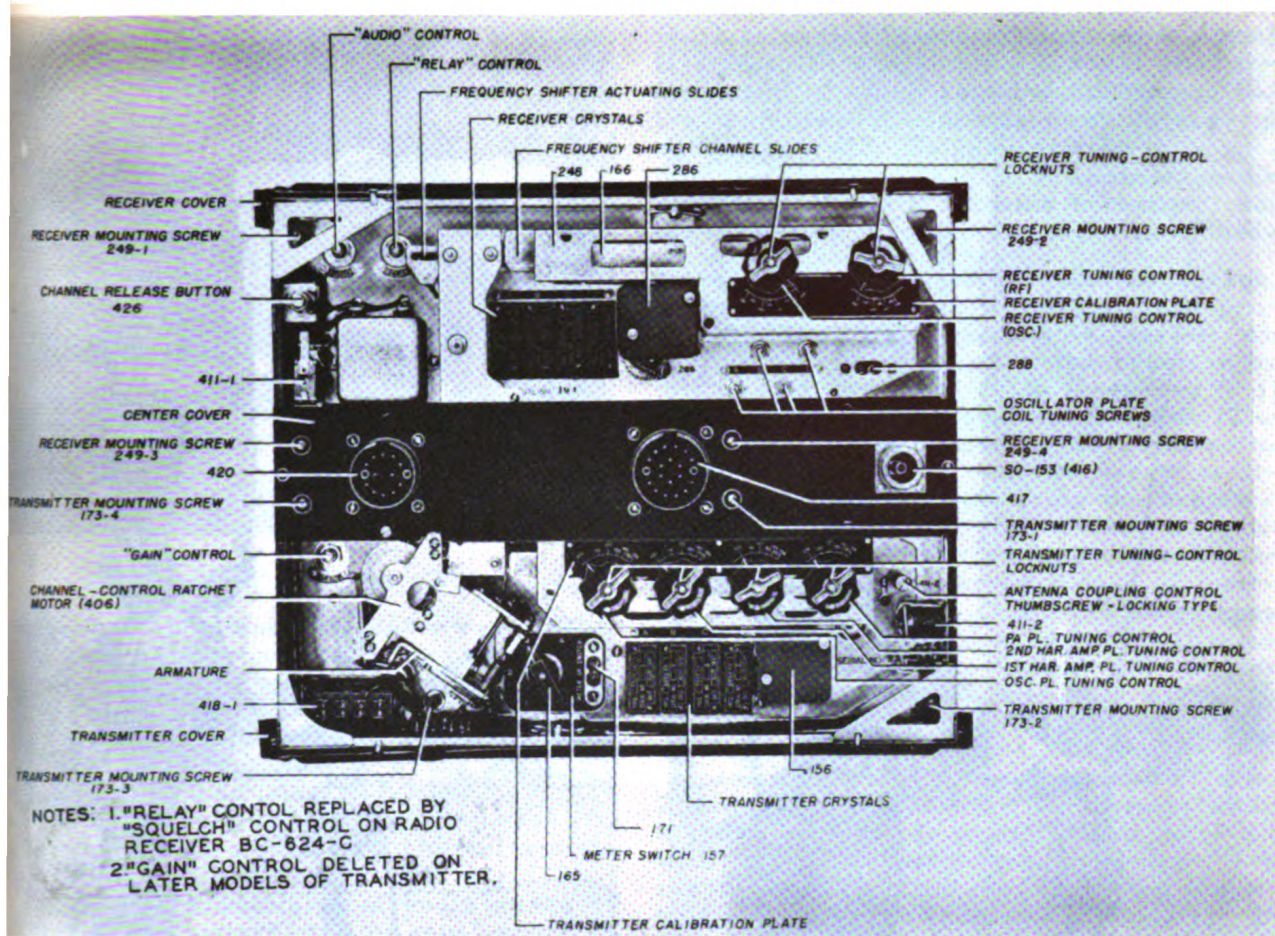


Figure 5-64.--Nomenclature of the SCR 522A Communications Set.

Pigeon Communication--A few CAP units maintain lofts of carrier pigeons, which have been put to good use in emergency operations.

Message Center--The Message Center is the agency of the commander at each headquarters delegated to receive, transmit and deliver all messages. Its purpose is to speed transmission and receipt for authentic messages. CAP units establish standard operating procedures for their message centers in order that they may function efficiently at their regularly established location or in the field during an emergency.

Messenger Communication--This means of communication uses people to carry orders and messages: runners are individuals who are appointed to serve as messengers or runners to assure the prompt delivery of messages which cannot be delivered by other means; mounted messengers use motorcycle, bicycle, or motor car. Individuals are appointed to serve as mounted messengers when mail service will not suffice and distances are too great for the use of runners; airplane

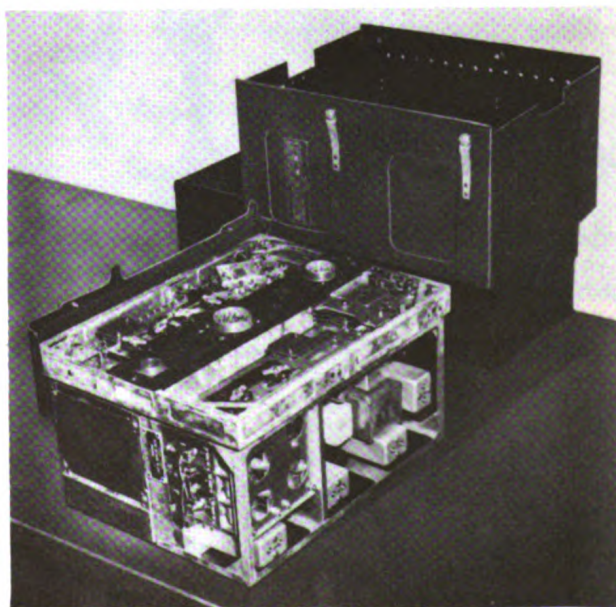


Figure 5-65.--SCR 542 Communications Set, Uncased.



Figure 5-66.--SCR 511 ("Walkie Talkie") with Chest Unit.



Figure 5-67.--SCR 511 ("Walkie Talkie") with Microphone and Power Supply Speaker.

messengers are used when other means will not suffice. Important messages are often transmitted between widely separated units by this means. Airplane messengers use the drop message to relay information to ground units. They employ the pick-up message to receive information from ground units when other means are not available.

What Is Radio?

Elements of Radio Transmission. A pebble dropped into a quiet pool of water will create an action similar to the action of radio waves. The energy of the pebble striking the water will be distributed to all parts of the pool by waves which emanate in circles from the spot



Figure 5-68.--A Message Center.

where the pebble entered. Radio waves from a vertical antenna act in much the same manner. However, radio waves not only travel along the surface of the ground, but go skyward at an angle with the ground. Other types of antennas may send more of the energy in one direction than in another, but the action and performance of the radio waves will otherwise be the same. The characteristics of a radio wave are as follows:

1. Speed, or velocity, of radio waves is expressed in meters, and is equal approximately to 300,000,000 meters per second. This is approximately equal to 186,000 miles per second, or the speed of light.
2. Wavelength of radio waves is expressed in meters. The distance the leading part of one wave has traveled when the next wave starts is the wavelength. This is the same as the distance between the crest of the first wave and the crest of the next wave.
3. Frequency of radio waves is expressed in kilocycles (kc) or in megacycles (mc), and is the actual number of waves transmitted or received per second. A kilocycle is equal to 1,000 cycles, and a megacycle is equal to 1,000,000 cycles.
4. Amplitude, or strength, is the intensity of the wave at a receiving antenna, expressed in microvolts per meter.
5. The power radiated is the rate at which electrical energy is radiated by a transmitting antenna, expressed in watts.

Modulated and Unmodulated Radio Waves. A radio wave of unchanging amplitude and unchanging frequency is said to be unmodulated. Such a wave is commonly called a carrier. A radio wave the amplitude or frequency of

which is varied in accordance with a signal is said to be modulated. A radio wave the frequency of which remains unchanged, but the amplitude of which is made to vary in accordance with a signal, is said to be amplitude-modulated (a-m). A radio wave the amplitude of which remains unchanged, but the frequency of which is varied in accord-

Continuous Wave Signals. Radiotelegraph, or continuous wave (c-w), signals are produced by keying an unmodulated carrier. An audible note is obtained at the receiver by mixing the incoming radio frequency (r-f) signal with a locally generated signal. The local signal is generated in the receiver by a device known as a beat-frequency oscillator. The audible note from the receiver follows the keying of the transmitter, and intelligence is conveyed from the transmitter to the receiver by means of International Morse Code. One of the advantages of radiotelegraph, or c-w, signals is that for a given power, greater range and sharper tuning can be obtained than with any other type of radio signal.

Voice-Modulated and Tone-Modulated Signals. These signals are made by combining audio signals, from either a tone source or voice, with r-f waves within the transmitter. The resultant transmitted signal is either amplitude-modulated or frequency-modulated. In voice-modulation, many audio frequencies, corresponding to the voice sounds are present. Only one audio frequency is present in tone modulation. At the receiver, the audio component of the incoming wave is reproduced through a headset or loudspeaker. It is possible to receive tone-modulated radiotelegraph signals with a receiver not equipped with a beat-frequency oscillator.

Comparison of F-M and A-M Systems. F-m systems require channel widths from 50 to 150 kilocycles for each station, and very high carrier operating frequencies are required to accommodate a reasonable number of transmitting stations. A-m systems operate on narrower channels and can be used with any practicable carrier frequency.

F-m transmission and reception is confined to approximate line-of-sight path because of the characteristics of very high-frequency (v-h-f) radio waves. Transmitters and receivers operating with amplitude modulation are less restricted in location.

In f-m systems, a received signal of approximately twice the strength of other signals will completely block out the other signals. In some instances, this strong signal

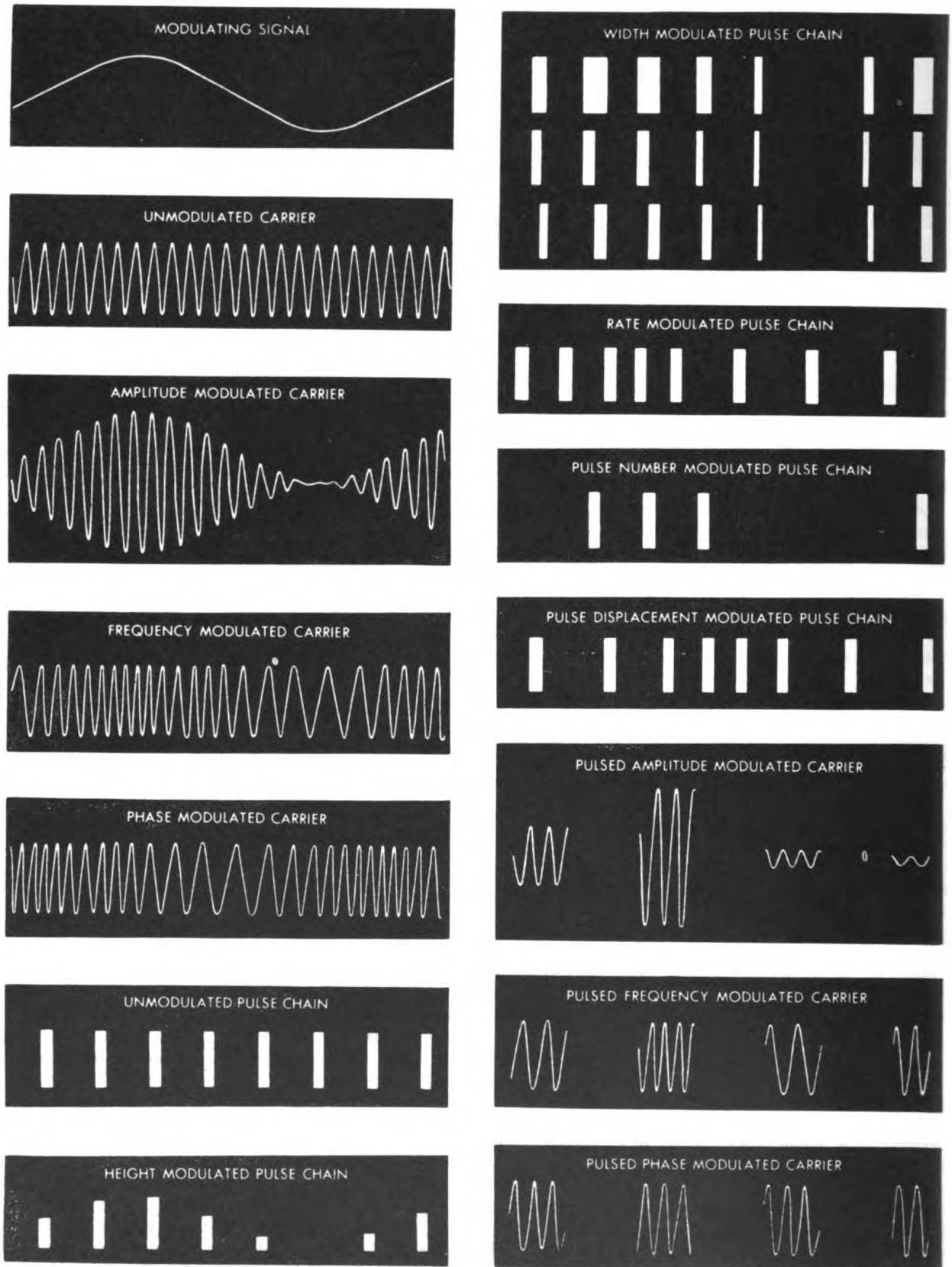


Figure 5-69.--Modulation Characteristics.

may be an unwanted signal from an adjacent f-m transmitter and the desired signal cannot be heard. It may occasionally be possible to shift the receiver antenna to a position that will bring in the desired signal to the exclusion of all other signals. In a-m systems, weaker signals are not blocked out and may interfere with the reception of a stronger signal. This interference may be so great as to prohibit the copying of messages except by a very experienced operator.

Designation of R-F Bands. The radio frequencies extend from about 20 kilocycles to over 30,000 megacycles. Since different groups of frequencies within this broad range produce different effects in transmission, the radio frequencies are divided into groups, or bands. The bands used for military purposes are as follows:

Designation of Band	Authorized Abbreviation	Frequency Range
Very-low-frequency	v-l-f	Below 30 kc
Low-frequency	l-f	30 kc to 300 kc
Medium-frequency	m-f	300 kc to 3000 kc
High-frequency	h-f	3000 kc to 30 mc
Very-high-frequency	v-h-f	30 mc to 300 mc
Ultra-high-frequency	u-h-f	300 mc to 3000 mc
Super-high-frequency	s-h-f	Above 3000 mc

Ground Wave and Sky Wave. The wave radiated from a transmitting antenna may be regarded as consisting of two parts. One part of the radiated energy travels along the surface of the earth and is called the ground wave. The remaining portion is radiated upward into space at an angle with the ground and is called the sky wave. The sky wave does not come under the influence of the ground to any great extent.

1. **Ground Wave.** The ground-wave component of the radiated wave rapidly loses strength because of the spreading and absorption by the ground. The rapidity of absorption is variable, being dependent upon the type of earth surface, vegetation, and man-made structures. No general statement can be made regarding the distance that will be covered by the ground wave for a given power or frequency. A radio wave of given characteristics may extend several times as far across salt water as across land. As a rule, more moisture in the ground will result in less absorption, and the distance covered with a given power output will increase. The loss in signal strength will generally be more rapid at higher frequencies. At frequencies above 20 megacycles, the ground wave is more or less limited to the line-of-sight, or

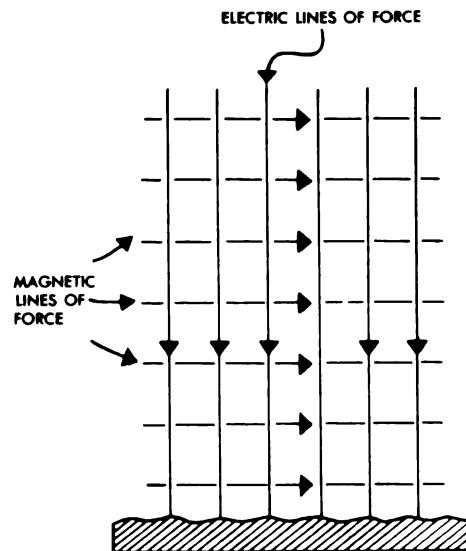


Figure 5-70.--A Vertically Polarized Radio Wave. Arrows indicate the instantaneous directions of the field for a wave traveling perpendicularly out of paper toward reader.

horizon, distance. Most field radio communication is dependent upon the ground wave.

2. **Sky Wave.** (a) The energy radiated upward by an antenna travels skyward until it strikes a heavily ionized (charged) region known as the ionosphere (formerly called the Kennelly-Heaviside layer). The distance of this layer varies from about 70 to 250 miles above the earth. The ionosphere itself varies in depth and degree of ionization, depending upon the time of day, the season, and solar activity. There are also changes from month to month, and from year to year. The paths of r-f waves passing through the ionosphere are refracted by the action of the ionization, or electrical charge. Some of the sky waves penetrate the ionosphere and are lost, but more often they are refracted in their paths and reflected back to earth at distant points. Whether or not the wave penetrates the ionosphere or returns to earth depends upon the frequency of transmission, the time of day, the time of year, and several other variable factors. Long-range radio communication is accomplished by means of the sky wave.

(b) In general, the distance between the transmitting antenna, and the point at which the sky wave first returns to earth is greater at higher radio frequencies. For a given frequency, this distance is also greater at night than in the daytime, and greater in winter than in summer.

(c) Sky waves may strike the earth, be reflected back into the ionosphere, and be again reflected back to earth at a more distant

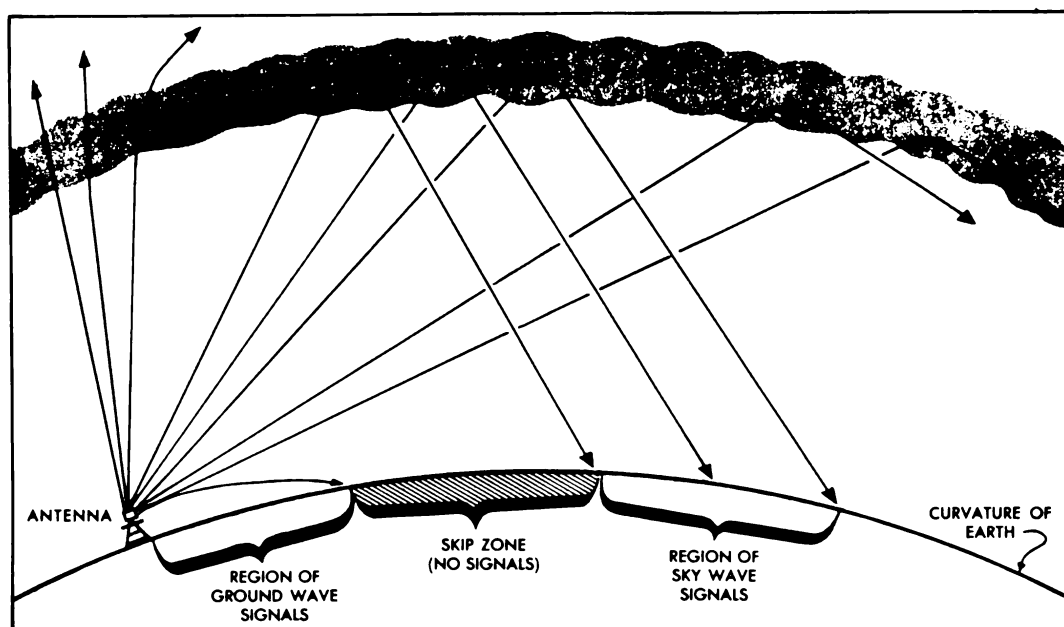


Figure 5-71.--Ground and Sky Waves.

point. This additional reflection between earth and ionosphere is accompanied by an attenuation of the radio wave, so that after a number of such reflections (depending upon the original power of the transmitter) the signal will usually be too weak for the most sensitive receiver.

(d) Above a certain high frequency and for a given distance (the exact figure depending upon all the factors mentioned previously), the sky wave is not refracted enough to cause it to return to earth; it therefore pierces the ionosphere and is lost in space. At such very high frequencies, all radio communication is accomplished by means of the ground wave, or on approximate line-of-sight radiation, which is regarded as part of the ground wave.

(e) Below a certain frequency and for a given distance (the exact figure depending upon the factors mentioned above and also on radiated power, antenna characteristics, atmospheric, and man-made interference), the wave is absorbed to such an extent that it is too weak to be used when it returns to earth. Below this frequency, called the lowest useful high frequency, communication is possible only by means of the ground wave.

(f) There is thus an upper and a lower limit to the frequencies which are useful for sky-wave communication over a given distance. Similarly, there is an upper and a lower limit to the distances over which sky-wave communication can be realized on a given frequency. The lower limit is called

the skip distance, and corresponds to the maximum usable frequency limitation; the upper limit is called the distance range and corresponds to the lowest useful frequency limitation.

Factors Controlling Range

Factors Involved at Transmitter. 1. Frequency. The ground wave is used for most field radio communication. When the transmitter is operating in the low-frequency band (30 to 300 kilocycles), the range of the ground wave may be as great as several hundred miles. This range becomes correspondingly shorter as the operating frequency of the transmitter is increased through the medium-frequency band (300 to 3000 kilocycles) to the high-frequency band (3000 kilocycles to 30 megacycles). When the transmitter is operating at frequencies above 30 megacycles, the range of the ground wave is limited to the distance to the horizon, called the line-of-sight radiation. When necessary, certain large or fixed high-powered transmitters operating in the high-frequency band make use of sky-wave radiation to establish fairly reliable communication over distances sometimes as great as 10,000 miles.

2. Power. The range of the transmitted signal will be somewhat proportional to the amount of power radiated by the antenna. That is, an increase in power will result in some increase in range, and a power decrease

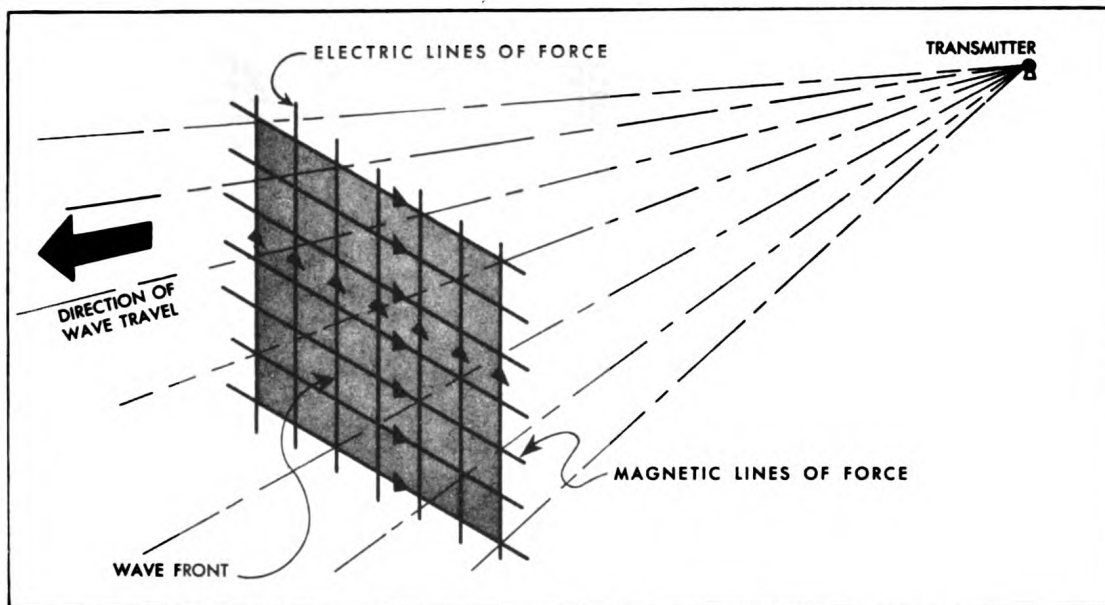


Figure 5-72.--Factors Controlling Range.

will decrease the range. This relation is not strictly proportional, however, and varies with frequency and with the operating characteristics of various types of radio sets. Under normal operating conditions the transmitter should feed only enough power into the radiating antenna to establish communication with the receiving station. Transmitting a signal more powerful than necessary is a breach of signal security, since it divulges the location of the transmitter to a much wider area of possible enemy direction finders.

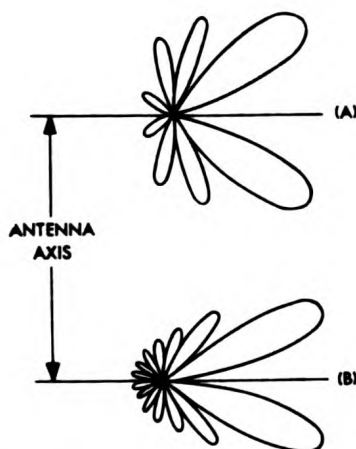


Figure 5-73.--Typical radiation patterns (cross-section of solid figure) for terminated long wires. (A) length two wavelengths; (B) four wavelengths, both for an idealized case in which there is no decrease of current along the wire. In practice, the pattern is somewhat distorted by wire attenuation.

3. Antenna. For maximum transfer of energy, the radiating antenna must be cut to the proper length for the frequency of operation, and must be correctly matched and tuned to the output tank circuit of the transmitter. The condition of the local terrain plays an important part in determining the radiation pattern, and thus affects the directivity of the antenna and the possible range of the set in the desired direction. If possible, several variations in the physical position of the antenna should be attempted to determine an optimum operating position radiating the most energy in the desired direction.

4. Capabilities of Transmitter Operator. The skill and technical capabilities of the

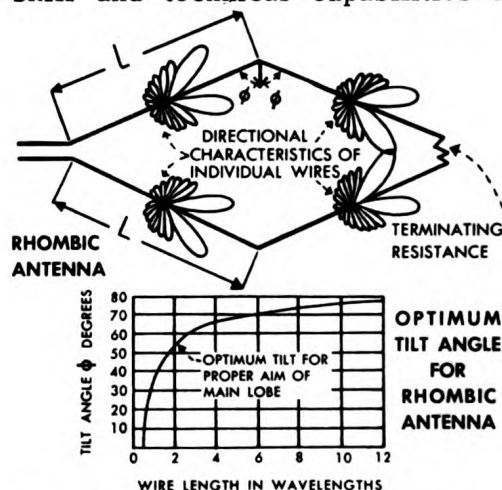


Figure 5-74.--Schematic diagram of a rhombic antenna illustrating how the optimum wave length varies with the tilt angle in degrees.

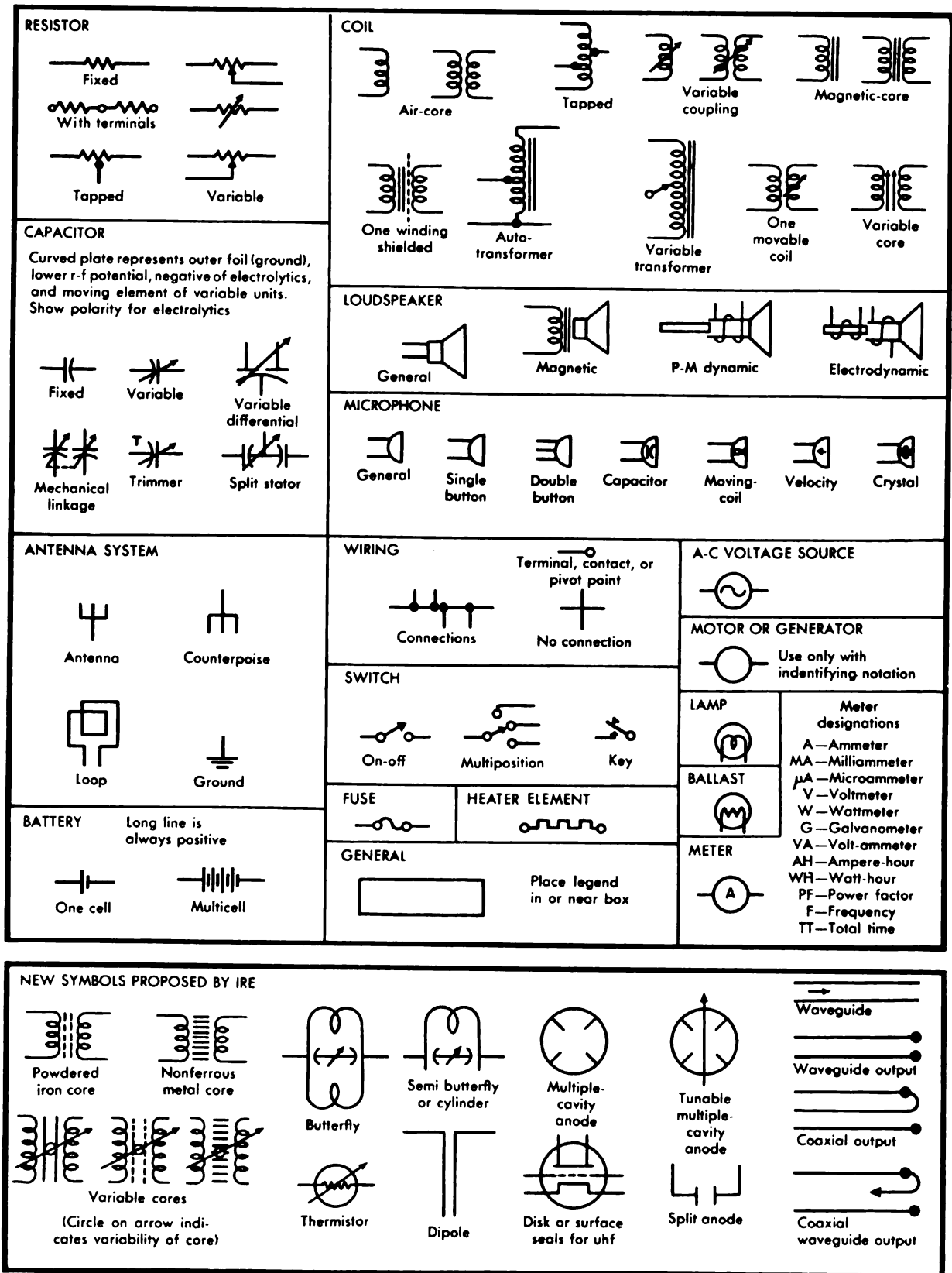


Figure 5-75.--Electronics Symbols.

transmitter operator play an important part in obtaining the maximum possible range. The transmitter, coupling output, and antenna feeder circuits must be correctly tuned to obtain maximum power output. When it is necessary to erect a radiating antenna, it must be properly constructed with regard to both electrical characteristics and condition of the local terrain.

Location of Stations

Technical Requirements. A radio station should be located in a position that will assure communication with all other stations with which it is to operate. In order to obtain efficiency of transmission and reception, the following factors should be considered:

1. **Terrain.** Hills and mountains between stations limit the range of radio sets. When operating in terrain of this nature, select positions relatively high up on the slopes. Avoid locations at the base of a cliff, or in a deep ravine or valley. For operation at frequencies above 20 megacycles, choose whenever possible a location that will give line-of-sight communication.

Dry ground has low conductivity and limits the range of the set. If possible, locate the station near moist ground which has higher conductivity. Water, particularly salt water, greatly increases the distances that can be covered.

Trees with heavy foliage absorb radio waves, and leafy trees have a more adverse effect than evergreens. The antenna should be well clear of all foliage and dense brush to obtain the maximum range.

2. **Man-made Obstructions.** Do not select a position in a tunnel, or beneath an underpass or steel bridge. Transmission and reception under these conditions will be almost



Figure 5-76.--Incorrect location of a field station.

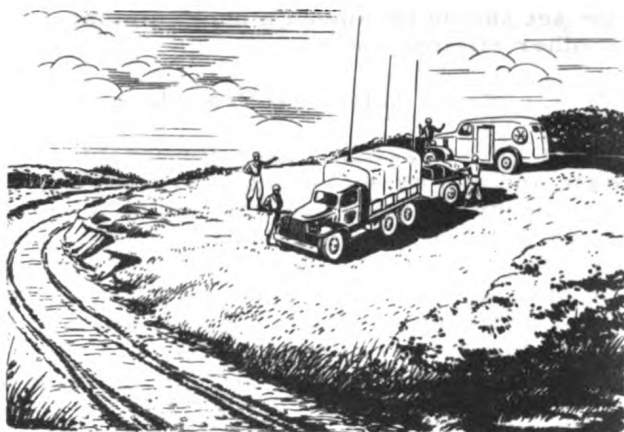


Figure 5-77.--Correct location of a field station.

impossible owing to high absorption of the r-f waves. Buildings between radio stations will hinder transmission and reception. This is particularly true of steel and reinforced concrete types.

All types of pole wire lines such as telephone, telegraph, and particularly high-tension power lines should be avoided in selecting a site for the radio set. Such wire lines absorb power from radiating antennas located in close proximity. They also introduce hum and noise interference in receiving antennas.

Positions adjacent to heavily traveled roads and highways should be avoided. In addition to the noise and confusion caused by tanks and trucks, ignition systems in these vehicles may cause local electrical interference.

Battery charging units and other generators should not be located too close to the radio stations.

Radio stations should not be located too close to each other.

Radio stations should be in quiet localities. The copying of weak signals requires great concentration by the operator, and his attention should not be diverted by extraneous noises.

Local Communication.--Contact should be maintained between the radio set and the message center at all times either by local messenger or field telephone. The station should also be readily accessible to the unit commander and his staff.

Final Considerations.--It may often be impossible to satisfy all the desirable conditions for the location of a radio station, and a compromise, depending upon the situation, may have to be made. If radio communication cannot be established in one location,

the set should be moved a short distance and another attempt made.

Radio Telephone Procedure

You probably have taken for granted the ease and clarity with which your favorite radio announcer talks, yet his casual tone and clear enunciation are not entirely luck. They are the result of considerable study not only by him, but by radio and sound engineers. Thus, when he stands in front of the microphone the odds are in his favor.

The pilot or radio operator of an airplane is not so fortunate. He speaks from the noisy cockpit of an airplane, not a soundproof studio. The radio operator of a field or mobile unit, or a hastily established emergency ground station, is in much the same position. The person listening probably experiences the same difficulty. If static, either man-made or atmospheric, is present the problem is further complicated. Because transmission of verbal messages is usually performed under such conditions a uniform radio telephone procedure is essential.

You have already learned the meaning of military discipline. Radio discipline is another type of discipline and is just as important as close order drill or saluting. You must carry on radio telephone conversation or transmission in a businesslike manner. You should refrain from making personal remarks or giving your listener details on the blond you had a date with last night. Remember, while you are indulging in aimless chatter, you may be interfering with the transmission of an important message which involves the safety of others.

Radio is the principal means of communication between aircraft in flight, among passengers by interphone within the airplane and for air to ground communication.

Radio sets fall in two general classes. Those installed in aircraft and those installed in ground stations. Transmitters are capable of transmitting either as radio telegraph or radio telephone.

Radio telegraph has the advantage of greater distance, ability to compensate for interference, and greater secrecy. The range of radio communication is dependent upon the power of the transmitter, the frequency used, the time of day or night, and upon the noise level at the receiving station. Radio communication is not secret, therefore cryptograms are used extensively in the transmission of messages by radio telegraph and radio telephone. It is easy to locate radio transmitters by use of direction finding equipment.

How to Talk--Use a normal tone when speaking into the microphone. Hold the "mike" directly in front of and as close to your mouth as you can. Speak distinctly and don't allow your voice to trail off at the ends of words and sentences. Remember you are competing with outside noises. The sensitivity of microphones will vary. The more sensitive microphones will pick up the sounds more readily and you will not be required to hold them as close or to raise the voice in order to transmit at the proper level.

Signal Strength--You will assume that the person receiving your transmission can hear you satisfactorily unless he notifies you otherwise. When making original contact you may ask, "How do you read me?" The response should be according to reception: "Weak but readable; strong but distorted." A reply of R-5, S-5, would indicate that your readability was perfect and your signal strength was perfect.

Call Signs--Call signs identify either the transmitter or receiving station.

Airplane call signs consist of numbers, letters, words, or combinations of them. Example: "Air Force six two zero," "Waco wun ate wun fo-wei thuh-ree," etc.

Control tower call signs contain the name of the airport followed by the word "tower." Example: "Sacramento Tower," "Scott Tower."

Radio range call signs consist of the name of the military installation, civil airport, or other place at which they are located, followed by the word "radio." Examples: "Chanute Radio," "Mobile Radio."

Example

Call: Air Force six too thuh-ree ze-ro
This is
Chanute Radio
Reply: Chanute Radio
This is
Air Force six too thuh-ree ze-ro

Parts of Message--The radiotelephone message has 3 parts--the call, the text, and the ending. A call will follow this sequence:

Call sign of receiving station.
Connecting phrase
Call sign of the transmitting station.

SAMPLE MESSAGE

Call: "Shamrock from Domino."
Text: "Where are planes?"
Ending: "Over."
Call: "Domino from Shamrock."
Text: "Planes are at base."
Ending: "Out."

Twenty-four Hour Clock--Always state time in four figures, using the 24-hour clock. This is done to eliminate the possibility of error and to make it unnecessary to use a.m. and p.m. The first two numerals state the hour, the last two, the minutes.

PHONETIC ALPHABET

Newspaper reporters apply the principle of the phonetic alphabet frequently when telephoning stories to their city desks, particularly when giving proper names. You may have resorted to the same tactics when talking over the telephone. Suppose you are telling someone on the other end of the line how to spell your name, Stevens. You might say S as in sap, T as in take, E as in Eden, V as in Volga, E as in Eden, N as in name, S as in sap.

The Air Force uses this same method in radiotelephone procedure, except that now you have a standard phonetic alphabet which is understood universally, rather than one of your own invention.

Learn the following Air Force alphabet. When it is necessary for you to identify any letter of the alphabet, this alphabet is to be used:

Letter	Spoken As	Letter	Spoken As
A	Able	N	Nan
B	Baker	O	Oboe
C	Charlie	P	Peter
D	Dog	Q	Queen
E	Easy	R	Roger
F	Fox	S	Sugar
G	George	T	Tare
H	How	U	Uncle
I	Item	V	Victor
J	Jig	W	William
K	King	X	X-ray
L	Love	Y	Yoke
M	Mike	Z	Zebra

Code words such as Luxow will be spoken as "Love Uncle X-ray Oboe William." Difficult words such as "catenary" will be spoken and spelled. Example: "Catenary--I spell--Charlie Able Tare Easy Nan Able Roger Yoke--Catenary."

Numerals

When you transmit figures by radiotelephone, pronounce them as follows:

Numeral	Spoken As	Numeral	Spoken As
0	Ze-ro	5	Fi-yiv
1	Wun	6	Six
2	Too	7	Sev-en
3	Thuh-ree	8	Ate
4	Fo-wer	9	Ni-ner

Q Signals

The following is a list of the Q Signals mainly used on our net and their meanings.

QRA The name of my station is ____.

QRK The readability of your signals are (1. Poor unreadable; 2. fair, readable send everything twice; 3. good readable; 4. very good; 5. perfect).

QRI I am busy with ____ please do not interfere.

QRM I am being interfered with.

QRN I am troubled with static.

QRS Send more slowly, or at ____ words per minute.

QRU I have nothing for you.

QRV I am ready.

QRX I will call you again at ____ hours or minutes.

QRW Inform ____ that I am calling him on ____ kcs or mcs.

QRZ You are being called by ____ on kcs or mcs.

QSB Your signals are fading.

QSD Your keying is defective.

QSO I can communicate with ____ direct on kcs or mcs.

QSP I will relay to ____ free of charge.

QSV Send a series of Vs on this frequency.

QSY Change to transmission on another frequency ____ kcs or mcs.

QTC I have telegrams for you or for ____

QTV Stand guard on the frequency of ____ kc or mc for ____ hours or minutes.

The letters INT placed before any of the above will make it a question.

STATIONS IN GROUPS

Several stations often work in a group, or on the same frequency. When transmitting in groups of this type, repeat the call sign of the receiving station at the end of the message. A station in the group which does not hear the first call and tunes in late will then know for whom the message is intended.

Stations working in groups should answer in the alphabetical and numerical order of their call signs. The alphabetical stations should answer first when both operate on the same net.

Two-Station Net

Assume that stations AWM and JFC are engaged in 2-way communication.

JFC transmits: (Establishing communication) "Able William Mike, this is Jig Fox Charlie--How do you hear me?--over."

AWM transmits: "Jig Fox Charlie, this is Able William Mike--Okay--over."

JFC transmits: "Able William Mike--message for you--over."

AWM transmits: "Send your message--over."

JFC transmits: "Proceed to Shangri-la--I spell--Sugar How Able Nan George Roger Item Love Able--too thuh-ree fi-yiv ni-ner hours--time wun six ze-ro ze-ro--correction--wun fi-yiv ze-ro ze-ro--read back all after time--over."

AWM transmits: "Time wun fi-yiv ze-ro ze-ro--over."

JFC transmits: "That is correct--out."

Four-Station Net

Assume that the following stations on a 4-way net are in communication:

AWM net control station (controlling station).

AB1 subordinate station.

AB2 subordinate station.

AB3 subordinate station.

XYZ net call (collective call for all 4 stations).

Example: AWM has a message for all stations on the net.

AWM transmits: "X-ray Yoke Zebra, this is Able William Mike--message for you--over."

AB1 transmits: "This is Able Baker Wun--send your message--over."

AB2 transmits: "This is Able Baker Too--send your message--over."

AB3 transmits: "This is Able Baker Thuh-ree--send your message--over."

AWM transmits: "X-ray Yoke Zebra--proceed to Shangri-la--I spell--Sugar How Able Nan George Roger Item Love Able--too thuh-ree fi-yiv ni-ner hours--time wun sev-en ze-ro ze-ro--over."

AB1 transmits: "This is wun--Roger--out."

AB2 transmits: "Too--say again--all after word proceed--over."

AWM transmits: "Too and thuh-ree--I say again--words twice--proceed to Shangri-la--proceed to Shangri-la--I spell--Sugar How Able Nan George Roger Item Love Able--I spell--Sugar How Able Nan George Roger Item Love Able--too thuh-ree fi-yiv ni-ner

hours--too thuh-ree fi-yiv ni-ner hours--time wun sev-en ze-ro ze-ro--time wun sev-en ze-ro ze-ro--over."

AB2 transmits: "Too--Roger--out."

AB3 transmits: "Thuh-ree--Roger--out."

Later AB2 wishes to have the receipt of this message verified. AB2 transmits: "Able William Mike, this is Too--verify message--time wun sev-en ze-ro ze-ro--over."

AWM repeats message, and AB2, acknowledging, transmits: "Too--Roger--out."

AWM wishes to correct message, transmits: "X-ray Yoke Zebra--message time wun sev-en ze-ro ze-ro--correction word after Shangri-la--tootoo fi-yiv ni-ner--I say again--too too fi-yiv ni-ner--acknowledge--over."

Each subordinate station sends in turn: "This is (AB1, AB2, AB3)--Roger--out."

RADIO LANGUAGE

It is impracticable to decide on precise wording for all procedure phrases which you might need to transmit messages. You'll use a few which have been adopted, when applicable. Be sure to use them only to express the meanings indicated here. Other words which you might substitute may have an entirely different operational meaning. If you make a mistake, correct it before continuing. State the word "correction," then proceed with the correct version.

<u>Word or Phrase</u>	<u>Meaning</u>
Roger	Received your message.
Acknowledge	Let me know that you have received and understood my message.
Wilco	Will comply. (Use Wilco to indicate that you will carry out orders or instructions.)
Over	Transmitting operator expects reply.
Out	End of communication.
Wait	I must pause for a few seconds.
Stand by	I must pause longer than a few seconds.
Say again	Repeat.

I say again	I will repeat.
Message for you	I wish to transmit a message to you.
Send your message	I am ready for you to transmit.
Break	Separate this text from rest of message.

CONTROL TOWER

Every pilot either departing from or arriving at a field must contact the control tower before takeoff or landing.

The tower operator uses either radiotelephone or light signals to transmit takeoff and landing instructions. He usually notifies the pilot of: (1) wind direction and velocity, (2) runway and field conditions, (3) special instructions concerning local conditions, (4) taxi clearance, (5) takeoff clearance, (6) altitude of field, and (7) correct time (if time is requested).

Example

Suppose you are in the cockpit of a Cessna at the National Airport in Washington, preparing to take off for New York. Your conversation with the tower would run something like this:

You: "Washington Tower, this is Cessna fo-wei fi-yiv ni-ner ze-ro--over."

Tower: "Cessna fo-wei fi-yiv ni-ner ze-ro--this is Washington Tower--over."

You: "Taxi clearance--over."

Tower: "Wind east twelve E wun too--field is soft--use east-west runway--heavy construction in progress southeast of field--taxi to west end of east-west runway--over."

You: "Wilco--out."

(Upon departure, you will remain tuned to tower frequency for at least 5 minutes unless cleared to another frequency by the tower.)

Assume you are now 10 miles south of LaGuardia Field, New York, and wish to land there. Your message would run like this:

You: "LaGuardia Tower, this is Cessna fo-wei fi-yiv ni-ner ze-ro--over."

Tower: "Cessna fo-wei fi-yiv ni-ner ze-ro, this is LaGuardia Tower--over."

You: "Ten miles south of field at two thousand feet--contact--landing at LaGuardia--over."

Tower: "Roger--out."

You: (Arriving at field) "LaGuardia Tower, this is Cessna fo-wei fi-yiv ni-ner ze-ro--landing instructions--over."

Tower: "Cessna fo-wei fi-yiv ni-ner ze-ro, this is LaGuardia Tower--wind south-west fifteen SW wun fi-yiv--Taylorcraft sev-en ze-ro six fi-yiv now approaching field to land--field is soft--use the northeast-southwest runway--you are second to land--over."

You: "Roger--out."

Tower: "Cessna fo-wei fi-yiv ni-ner ze-ro, this is LaGuardia Tower--you are cleared to land--over."

You: "Wilco--out."

REFERENCE

CAP Reg. 100 Series Communications.

TM 11-454 The Radio Operator.

TM 11-460 Radiotelephone Procedure.

TM 11-625 For SCR 543.

TM 11-281 For SCR 399-499.

TM 11-245 For SCR 511.

FM 24-10 Combined Radiotelegraph Procedures.

TO No 08-10-105 For SCR 522.

PUBLIC RELATIONS

One of the most important activities of the Civil Air Patrol in peacetime is the maintenance of a positive public relations program, especially at the small community level, for without public interest and support, CAP would be sorely handicapped in the pursuit of its primary goal: creation of a volunteer, well-trained force of men who, with their equipment, will be ready for instant mobilization in time of national emergency.

The task of getting public opinion solidly behind CAP falls largely to the public information officers at all levels, and it is one

which should not be too difficult of accomplishment once the PIO learns the basic tenet of good publicity: "Give 'em what they want."

Newspapers, magazines and radio stations are hungry for news, and nearly every activity of CAP is news--if it is presented in an appetizing package. The journalism text which follows will show you how to wrap it up.

Public information is any information about your unit which is of interest to your members and to the public in general. Good public relations consists of building up good will in your community, be it a village, a state,

or the nation, by keeping its citizens always apprised of what you are doing, and why; and through special events and other projects designed to stimulate public interest.

PIO Duties

A Public Information Officer's duties and responsibilities include the following: He must:

1. Know accurately the functional organization of his unit, the CAP and the USAF, and should keep as complete a file of information as possible on CAP activities, biographies of key personnel, and other reference material, so that he can answer quickly and intelligently any queries put to him by newspapers or other news disseminating agencies. And he must let those agencies know that the information is available, and that their queries are welcome.

2. Prepare and supervise the preparation of news and feature stories, magazine articles and radio broadcasts on his own initiative, as well as posters, photographs, and other informational material on CAP.

3. Maintain close and friendly contact with newspaper men, magazine editors, radio station managers and program directors, and other individuals or organizations in his area deemed to be potential agencies of publicity.

4. Edit weekly news letter and news bulletin for distribution within the unit and to outside news disseminating agencies.

5. Keep abreast of and, when possible, ahead of all new developments in the CAP program which might be newsworthy, making field trips to gather source material where necessary.

6. Maintain a clear, concise file of public information policies.

7. Provide publicity for USAF recruiting and CAP activities.

8. Publicize at every opportunity the position of Civil Air Patrol as an auxiliary of the USAF, emphasizing development of the cadet program.

9. Work in close cooperation with public information officers of the USAF.

10. Originate and supervise the holding of special events designed to capture the public interest, to promote community cooperation with CAP, and to demonstrate dramatic community services rendered by CAP.

11. Write speeches for the commanding officer or commanding general; hold briefs with the speaker to get his style of delivery and the ideas he will have as to the development of the speech.

As an illustration, consider the operation of the National Headquarters Office of Public Information, which is charged with compiling and releasing information about the command and its 52 wings which should properly be brought to the attention of the reading and listening public.

That office is responsible for advising the Commanding General on policy for public information and public relations. In addition, it must promulgate these policies throughout the wings to assure that no violations of Air Force policy occur to present the Air Force and its auxiliary, the Civil Air Patrol, in an unfavorable light.

One of the PIO's first and most important tasks is to acquaint the other officers and men of his unit with his job and with their obligation to supply him with information and guidance when requested, as well as with "tips" on possible news stories as they develop within the various activities. He must make it clear to them, however, that all such news stories **MUST** be channeled through him. If there's a mistake, it's the PIO who is responsible.

When you have a request from a magazine or newspaper that deals directly with one of the sections of your command, it is generally best to have that section chief prepare the copy for you, and then re-write the piece in the style best suited for the medium at which you are aiming. Be sure to check your re-write back with the section chief after you have completed it. He probably will argue with you about your choice of language, but hold out for it against technical terms or you won't have many readers for your story.

You must study your public, your community, and its readers and listeners, to decide on the type of story most suitable. Many



Figure 5-78.--Posters are good public relations media.

an excellent public relations program has failed because it was not tailored to the community toward which it was beamed. You can tell from knowing the people and studying the newspaper and radio style of the community, the kind of release most likely to be well received.

Following are a few simple rules that will assist you in your work:

1. Get spot news out rapidly. Yesterday's news is as dead as the proverbial dodo.

2. Keep your feature stories timely and use a local angle whenever possible.

3. Check and double-check all statements in your stories for accuracy. Spell names correctly and use full names: "J. R. Smith" or "John Smith," but never "J. Smith." Be certain that titles, rank and addresses are correct. There is no excuse for careless reporting.

4. If you don't know the answer to a reporter's query, tell him so. Don't guess, and don't equivocate. Be frank.

5. Always protect a reporter who comes to you with an idea for an exclusive story. It is his story, and should not under any circumstances be divulged to a competitor.

6. Don't work the mimeograph machine overtime. To turn out a lot of copy which won't be used not only is wasteful of time and supplies, but it also will give you a bad reputation with the newspapers and make it more difficult for you to obtain space when a real story comes along.

7. Don't over-write. Keep your stories short and to the point. It is seldom that a newspaper will use more than two pages of copy in any news story that is likely to originate with you unless that story is a very big one. In the latter case, the newspapers probably will cover it themselves and your principal role will be to provide them with the background information. When dealing with weekly papers, one release a week is generally all they can handle.

As a PIO, you must bear in mind that the publicity received is the end result of months of building good will and good relations with news disseminating agencies. You may be able to write an excellent story, but it's very likely to wind up in the wastebasket if you haven't paved the way for it by gaining the good will and confidence of the editors.

Every PIO, whether at wing, group, squadron, or flight level, should keep in touch with the AF Liaison Officer assigned to his wing and co-ordinate his activities as much as possible with those of that officer. This co-operation is particularly necessary in connection with stories concerning recruiting and cadet training.

News Elements

Examination of a dozen typical news stories, picked at random, will reveal many factors which are common to all: immediacy, proximity, consequence, prominence, drama, oddity, conflict, and progress.

Those terms necessarily are arbitrary, coextensive, and they often form a mosaic within the boundaries of a single story. It may be profitable to discuss each of these elements in turn and show how they march across the parade ground of the newspaper.

1. Immediacy. Pick up any evening newspaper and you will find that its columns are filled with stories about events which occurred, or were revealed, TODAY; a morning newspaper, which is usually on the street before you have arisen, is concerned with what happened YESTERDAY. Anything older than that isn't, ordinarily, news. That is not to say that the full text of the story must be brand new. Most newspaper stories, in the body or at the end of the article, carry relevant background material which has been printed previously. But except in very rare instances, the first few paragraphs deal only with immediate news.

It should also be made clear that the immediacy rule does not apply to the time of occurrence, but to the time of disclosure. Let us say the Air Force develops a personnel-carrying rocket-type aircraft capable of flying 1,000 mph or more, and actually flies it at those speeds in secret tests. The information is not released to the public until a year later. Although the aircraft is 12 months old, the story about it is brand new, and would receive as much newspaper space as though the speed tests occurred that same day.

By the same token, the PIO may give an up-to-the-minute touch to his story by pointing out that it has just become available for publication. But don't try this unless the story really is newsworthy and has not previously been published.

2. Proximity. Always use a local angle in your story when possible. Names are often the peg on which you can localize an event which took place far away. Nothing is truer than the old saying that "names make news." The Podunk Bugle may not be the slightest bit interested in an international drill competition in Toronto, Canada, but if you build your story around Willie Weston, a member of the drill team, who lives on Main Street, Podunk, you'll get your play from the paper. Many a story which otherwise would have been consigned to the waste

basket has been published because a smart PIO used a local name as a peg on which to hang it. Use names, and yet more names, and be sure to give them in full, and SPELL THEM CORRECTLY.

3. Consequence. By the term consequence is meant import or significance, hence, breadth of appeal. Simple news arithmetic teaches that news of an incident affecting 10,000 persons rates higher in the scale of values than an incident affecting 100.

4. Prominence. The names of widely-known persons, places, or objects enhance the value of news. If Joe Blow falls down and breaks his ankle, nobody cares. But let Harry S. Truman, Rita Hayworth, or John L. Lewis develop a case of the sniffles and it lands on page one. Mary Doe jumps to her death from the top of a Washington building

and it's just a local item for the Washington papers. But if she takes off from the Washington Monument, which most everybody knows about, it would make headlines from coast to coast.

On every possible occasion, the reporter swings his story about prominent names, places, events, and situations, and as PIO for your unit, you are its reporter.

5. Drama. Most people lead prosaic lives, and depend for the most part on the movies, radio, and newspapers for vicarious thrills. There's plenty of drama in many of CAP's operations. Make use of it in your publicity efforts. When you're publicizing a search mission, play up the drama of the search and you'll do a lot to mitigate the unfavorable aspect of the crash itself. Air shows are full of drama; get it in the story. Mercy



Figure 5-79.--Air shows are full of drama.



Figure 5-80.--When Santa swaps his reindeer for a CAP plane, that's news.

missions, simulated searches, parades, and inspections can furnish you with dramatic stories.

6. **Oddity.** The prosaic is never news. The "man bites dog" example is as true as it is trite. To get Joe Blow back in the picture, let's assume he slipped in the bathtub and broke his collar-bone. That's not news. But let's suppose that Joe Blow is a CAP pilot who has flown many perilous missions, perhaps on coastal patrol, and logged thousands of hours in the air without mishap. Then his bathtub accident becomes news, perhaps worthy of a play on page one.

7. **Conflict.** Conflict is an important element in many news stories. The news columns are filled with stories about wars, verbal tilts between politicians, battles between husbands and wives. Stories about man's battle with the elements also depend for their news value on the principle of conflict.

8. **Progress.** Changes in the established order of things, particularly changes for the better, are always news. A man invents a gadget which will increase flying safety; an astronomer catches an interplanetary signal, a medical scientist stumbles onto a cure for cancer. That is news. Your unit supplies the means to extend the efficiency of your local Red Cross unit. That's news, too, if you present it properly, and can be a source of continuing stories.

Don'ts for PIOs

1. Don't editorialize. State the facts and let the reader make up his own mind what they mean.

2. Don't waste words. Newspaper white space is valuable, and editors aren't going to waste time on long-winded, over-written stories.

3. Don't use trite phrases. "White as a sheet," "black as ink," and "slow as a snail" are meat for a copy-reader's pencil, and if there are too many such phrases, the chances are that your story will be filed neatly in the waste basket.

4. Don't over-load your story with adjectives. Say it with verbs. With a good choice of verbs, the PIO can make his ideas sparkle, glow, sting, alarm, soothe, blister and delight.

5. Don't call your stories "releases." In wartime, when all information concerning military activities is restricted, they are indeed "releases." But in peacetime, you're trying to "sell" the CAP. Call them "stories."

Story Structure

Most newspaper stories are written from the top down, usually with a complete summary in the lead (the first paragraph, or the first several paragraphs) and the explanation or background in the body or at the end of the story.

A play, a short story, or a novel begins at the beginning, often with a description of the background, or with some minor scene, and is developed gradually until it reaches a climax. The narrative ends there, or soon thereafter.

A news story, in contrast, begins with the climax, keeps minor details for the closing sentences or paragraphs. The reporter plays his highest trump first, and the other cards fall in the order of descending values. Except in very rare instances, he never puts important facts at or near the end of his story, for when a piece has to be trimmed after it has been put into type, it is done by lopping off a paragraph, or perhaps several paragraphs, at the end.

Leads

The standard summary or digest lead is the simplest, safest and strongest of all forms of the opening paragraph. In it, the writer attempts to answer the five W's--Who? What? When? Where? and Why?--or as many of them as he can get in. Here's an example which might have appeared in the Toonerville Bugle.

Arthur Jones, 17, of 271 S. Main St., Toonerville, was one of 26 boys from all parts of the United States who took off from Washington

yesterday in a United States Air Force Constellation en route to England to participate in the Civil Air Patrol's International Exchange of Cadets.

Who? Arthur Jones. What? He took off in a Constellation. When? Yesterday. Where? From Washington. Why? To participate in the CAP International Exchange. The whole story's there in the first paragraph. But it can be expanded to any length simply by adding more details: what school Arthur goes to, who his parents are, what CAPC squadron or flight he belongs to, how he got to Washington, where he is going to stay while in Europe, how long he is going to be abroad, what he will do while there, the date of his return home, and a paragraph or so about what the International Exchange is. The story thus might continue something like this:

Young Jones, a junior at Toonerville High School and a member of the Toonerville CAP Cadet Squadron, was flown to the Nation's Capital on Friday by Major James A. Deubler, USAF-CAP liaison officer at Rutland, in an Air Force C-45.

The Toonerville youth, son of Mr. and Mrs. John W. Jones, will spend the next three weeks touring the British Isles. While there he will visit shipyards, Royal Air Force installations, military schools, and such historic spots as Stratford-on-Avon, Shakespeare's birthplace; Buckingham Palace, the Houses of Parliament, and the Tower of London.

Arthur, who was chosen from among 2,500 cadets to represent the Pennsylvlucky Wing of CAP in the International Exchange, will return home on July 8.

The International Exchange of Cadets was inaugurated in 1948 by the Civil Air Patrol to promote international fellowship and to provide a stimulus for CAP Cadet activities at home. Only the most outstanding members of cadet units are chosen to participate in the exchange.

A simple fact story, such as the example given, is by far the easiest to write. The PIO, however, will be called upon to turn out many different types of articles. The quote story also will be used frequently.

Confronted with a several thousand word speech, out of which he is supposed to get a news story, the novice PIO might well be at a loss as to how to begin, but it's simple, once you get the knack.

One method of attack is to begin with a direct narrative lead:

Major General Lucas V. Beau, Commanding General of the Civil Air Patrol, was the principal speaker yesterday at a luncheon meeting

of the Toonerville Rotary Club in the American House.

General Beau, who has just returned from a flying trip to Europe, during which he made a survey of continental cadet programs, said the CAP program is far in advance of those abroad.

But don't use that type of lead if there's any "hot" news in the general's speech. In such a case, start with the news, thus:

Toonerville will be one of the first targets of an atomic attack in the event of another war, Major General Lucas V. Beau warned today at a luncheon meeting of the Rotary Club in the American House.

"Because it is one of the important transportation centers of the United States, and because of its vulnerable position on the seacoast," the general declared, "Toonerville can expect to be one of the first cities to feel the fury of the initial attack."

General Beau, Commanding General of the Civil Air Patrol, said the initial assault might be made with long range bombers, guided missiles, or submarines, or a combination of all three.

And then you continue with more quotes to develop the principal theme of the speech.

Home Town News. You're not going to have many stories about atomic weapons, however. Most of your public relations effort will deal with small stories of interest only to the home town readers: even squibs in the personal columns. Transfers or promotions, the award of a medal, or some other minor event lifted from the routine CAP calendar, all are grist for your mill. Don't overlook them.

The Interview. While the PIO won't be required to do much interviewing of his own, he'll often find it necessary to shepherd a visiting brass hat or civilian celebrity through



Figure 5-81.--The PIO should have all the background information about his speaker.

the ordeal of an interview with the local newspapermen, and to take care of the publicity stories in advance of the visit.

He should acquaint himself thoroughly with the background of the person to be interviewed, learn as much as he can about the subject's social and political philosophy, and "bone up" on the matters about which he is to be interviewed. He will then be in a position not only to supply such information as the newspapermen want, but also to steer the interview into the desired channels and keep the interviewee away from the pitfalls.

Deadlines. Speed marks the news-handling process in all of its ramifications, particularly activities of the local-room staff which must conform rigidly to deadlines, that is, the stated hours when copy must clear the city desk and go on its way to the composing room. In metropolitan newspaper shops, the deadlines are inflexible. It is only in movies that orders are issued to "hold the presses." Trucks, trains, and airplanes operate on scheduled time, and the type forms can not and do not wait. Only extremely important news stories are re-plated--a process whereby the presses are stopped for a few seconds to allow the insertion of a new story.

The man in the street pictures the news room as a bedlam of confusion. On the contrary, it is well organized and the men em-

ployed are unflurried and self-possessed. Rapid work under pressure is taken as a matter of course. The secret of its speed lies in its organization, system, and routine processes keyed to the handling of news of any variety or urgency and the PIO must be thoroughly familiar with the "deadlines" and the time involved in presenting his story, or the story will be wasted.

Speeches. Other of the PIO's chores is to write speeches, after-dinner talks, and radio scripts for his commanding officer and others. In doing so, he should be careful to keep as much as possible to the style of the person who is to deliver the address. He should study the mannerisms of the speaker, and should make allowances for his normal speed of delivery. He should study the audience to which the speech will be directed, and aim the speech directly at that audience.

After the speech is written, the PIO also must see that sufficient copies of it are available for the press, and see to it that those copies get into the hands of the reporters, thus avoiding the chance of misquotations which might prove embarrassing.

REFERENCE

CAP Reg. 190 Series Public Relations.

Unit VI

MISSIONS OF CIVIL AIR PATROL

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UNIT VI

MISSIONS

The purpose of the Civil Air Patrol is to provide a reservoir of pre-flight-trained young men available for the Air Force in the event of war, and a pool of civilian aircraft and trained pilots and crews to be used in missions at home so military aircraft and personnel can be released for more pressing engagements abroad.

To aid in the attainment of that two-fold objective, the United States Air Force has established four peacetime missions for the CAP, all of which, though non-military in character, point toward military ends.

Those missions are: 1. search and rescue; 2. national network; 3. cadet program; and 4. preparation for mobilization.

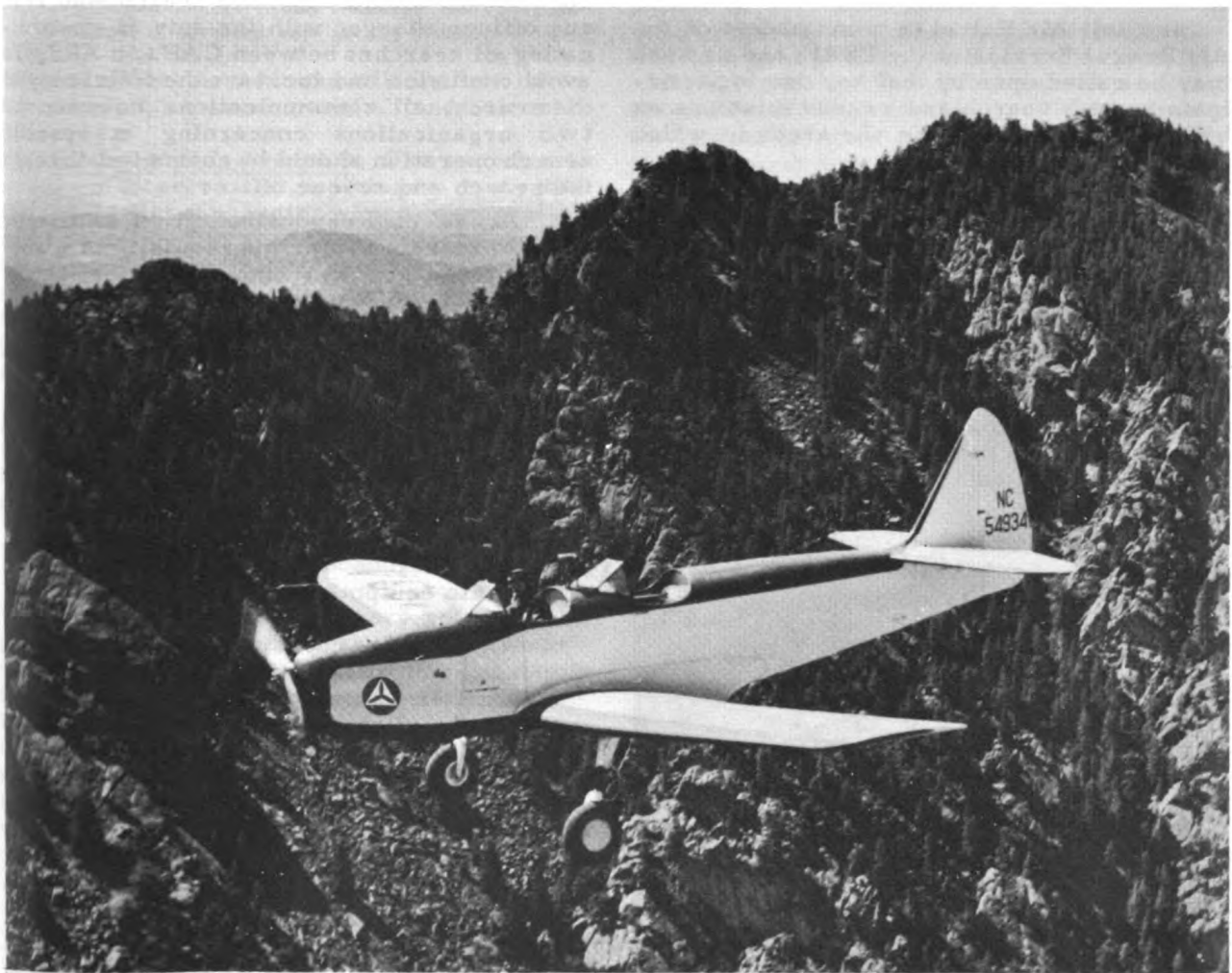


Figure 6-1.--Most spectacular of all CAP missions is search and rescue.

All of the activities which enter into the first three missions, as will be seen, lead directly into the fourth, Preparation for Mobilization.

SEARCH AND RESCUE

By far the most spectacular of all of CAP's peacetime missions is that of searching for lost aircraft and rescuing downed airmen and other missing persons. It is also one of the most important, for all of the procedures which are used in a successful search mission also are utilized in such wartime duties as coastal, border, and forest patrol; tow target and tracking missions; anti-sabotage patrols; courier service; and other such activities.

Status

The Civil Air Patrol is a component of the Air Rescue Service of the USAF, and as such may be called upon by that service to participate in such search and rescue missions as become necessary within the areas in which CAP units operate.

Expenses

Gasoline and lubricants actually consumed are reimbursable to the CAP or the owner-pilot participant only when they are ordered to conduct a search by the Air Rescue Service. Expenses of volunteer searches must be borne by CAP members, except where private arrangements are made with the individual or agency for whom the search is flown. Gasoline, when duly authorized by ARS, may be



Figure 6-2.--CAP is a component of the Air Rescue Service.

obtained from USAF installations, or from commercial dealers holding government contracts on AF Form 15. The signature of the AF-CAP liaison officer is required on this form, and CAP signatures are not authorized.

Planning

Search and rescue missions always are unexpected, always come without advance notice. The more advance planning the wing is able to achieve, therefore, the sooner and more efficiently the mission can be brought to a successful termination. Advance planning, to make it possible for all units to swing into the required tasks like the parts of a well-oiled machine, should take into consideration all of the following:

1. Search and Rescue Officer. Each wing commander should appoint a search and rescue officer charged with the duty of co-ordinating all searches between CAP and ARS. To avoid confusion and increase the efficiency of the search, all communications between the two organizations concerning a specific search operation should be channeled through the search and rescue officer.

2. Areas of Responsibility. Familiarity with the terrain is a prime requisite of a successful search. Each wing, therefore, should divide its territory into areas and designate a squadron or other unit to be responsible for each area, subject to the orders of the search and rescue officer.

3. Available Means. Wing commanders should require each unit of their commands to submit a report on the last day of each month, listing the following information:

- a. Number and type of aircraft in unit. (Include USAF, CAP and privately-owned aircraft.)

- b. Radio equipment of each aircraft listed in a.

- c. Whether or not such aircraft are equipped for night flying.

- d. Number of personnel, by duty assignment (i.e., pilots, observers, communicators, etc.)

4. Communications. Unit commanders should be thoroughly familiar with all communications facilities in their areas, including:

- a. Commercial telephone and telegraph.

- b. Aircraft radio.

- c. Field radio and telephone.

- d. Communications facilities of public agencies, such as state highway patrol, etc., which might be available in emergencies.

- e. Visual signalling systems which should be set up, including air-to-air, air-to-ground,



Figure 6-3.--A search plane receives instructions from an advanced base on the ground.

and ground-to-air. Means will include message drops, ground panels, and aircraft maneuvers.

5. Co-operating Agencies. The search and rescue officer should maintain a currently up-to-date list of agencies whose co-operation might be needed in search and rescue operations, together with the phone numbers and names of officers to be contacted. These might include any or all of the following (but this list is not to be regarded as all-inclusive):

Red Cross, USAF bases, Air Reserve and Air National Guard units, CAA offices, state and local police agencies, U. S. Forest Service offices, commercial air lines, aviation clubs, newspapers and radio stations.

Operating Procedure

Although conditions may vary to some degree in different parts of the country, some definite operating procedure must be set up in each wing to insure the most efficient utilization of the means at hand, and to provide for the maximum safety of aircraft and personnel engaged in the search. The following suggested Standard Operating Procedure will meet the needs of most wings.

Authorization to Search

1. The Air Rescue Service, with headquarters at Bolling AFB, Washington, has divided the United States into nine regions, with an air rescue unit stationed in each. Those units are at Westover, Massachusetts; MacDill, Florida; Maxwell, Alabama; Selfridge, Michi-

gan; Lowry, Colorado; Biggs, Texas; March and Hamilton, California; and McChord, Washington Air Force Bases.

Authorizations for CAP participation in search missions will come from the ARS unit in a region, either as direct request for CAP assistance or as a permission granted to a request originating with CAP. Such request will be in writing; if verbal, written confirmation will follow.

When requesting assistance, the ARS will give the CAP search and rescue officer the following information:

- a. Nature and location of the incident;
- b. Type of equipment suitable for the mission;
- c. Number of aircraft required;
- d. Place and person to whom to report; and
- e. Any recommendation considered appropriate to the requirements of the mission.

Although authorization for CAP participation in a search mission must come from the ARS, the request for such a search need not originate with that agency. A CAP member who hears of a crashed plane should notify the wing search and rescue officer, who will immediately pass the information along to the ARS and may request permission to search.

Search and Rescue Officer

1. After he has been asked to provide assistance or given permission by ARS to initiate a search, the search and rescue officer will take these steps:

- a. Determine adequacy of information for initial dispatch of CAP pilots.
- b. Notify CAP units to be utilized in search and inquire into availability of pilots, observers and aircraft. Report back to ARS whether required aircraft and personnel are available.
- c. Notify Wing commander and liaison officer.

d. If he cannot himself participate in the search, search and rescue officer will designate a mission commander, who will command the operations at an advance base as close to the scene of the proposed search as possible. Mission commander will be briefed thoroughly on the information received from the Air Rescue Service and data obtained from CAP files.

(NOTE: It would be well for each wing to prepare a standard form on which all necessary search data, such as make, model, type and description of missing aircraft; name, address, and description of pilot; name of next-of-kin; flight data, such as point and time of departure, destination, course, fuel on board at take-off, flight plan, and other needed information can be noted.)



Figure 6-4.--Areas of responsibility in ARS rescue plan.

CAP-GRUP Form 6 PILOT INFORMATION CARD		CLASSIFICATION	
		<input type="checkbox"/> Pilot	<input type="checkbox"/> Observer
		<input type="checkbox"/> Aircraft Owner	<input type="checkbox"/> Other
Name _____	Age _____		
Rank _____	Serial Number _____		
Home Address _____	Home Phone _____		
Bus Address _____	Bus Phone _____		
What Class Pilot's Cert. _____	Cert. Number _____		
Aircraft Ratings Held _____			
Date First Pilot's Cert. Obtained _____	Class of Radio License _____		
Total Flight Time Logged _____	As of _____ (Date) Aircraft Classes _____		
Total Hours Flown As Observer _____			
Owns Aircraft? _____	What Make and Type? _____		
Aircraft Based at _____	Airport in _____ (City and State)		
Will Permission Be Granted to Other Qualified CAP Pilot to Fly Aircraft on CAP Missions _____			
Above Pilot Has Qualified to Fly Following CAP Aircraft _____ (Give Types)			
Can Best Participate in CAP Missions During Daytime On <input type="checkbox"/> Sun. <input type="checkbox"/> Mon. <input type="checkbox"/> Tue. <input type="checkbox"/> Wed. <input type="checkbox"/> Thu. <input type="checkbox"/> Fri. <input type="checkbox"/> Sat.			
Other Skills and Training Useful to CAP Missions _____			
CAP Unit to Which Attached _____			
Above Data Compiled By _____ Date _____			
NOTE: Above Data Will Be Checked Each 90 Days And Changes Made To Keep Data Current.			

Figure 6-5.--Information on pilot information cards must be kept currently up-to-date to be effective.

e. Issue all orders concerning search through Mission Commander.

f. Brief Mission Commander on method of communications to be used. (Telephone, CAP radio, commercial broadcasting companies, state police radio facilities, and/or CAA radio stations, etc.)

g. Make daily call to Air Rescue Service with information received from CAP mission commander as to results of search, area searched, number of aircraft in search, and Form 15 data.

h. If crash is found, notify Air Rescue Service of exact location on Air Defense grid map and all other pertinent information.

Mission Commander

1. Will:

a. Familiarize himself with all phases of the incident.

b. Set up operations at advance base as near as possible to center of supposed route taken by lost aircraft. Often a CAA emergency field or other open field can be employed as an advance base by trucking ground personnel, fuel, and other supplies to that location. Each unit should prepare plans in advance to so utilize likely sites within their areas of operation.

c. Establish a briefing room near some means of communication. Room should have a map board, tables, typewriter, plotter, computer, radio transmitter and receiver, crash equipment, and photo developing kit. Usually the mission commander's presence will be required here continuously, rather than in the air.

d. Notify Wing Search and Rescue Officer where he can be reached at all hours.

e. Investigate all possible means of communication, such as state highway patrol and local police radio.

f. Set up a plan for air-ground and air-air communications. A visual signal system is most important, for some of the aircraft and many of the searching parties on the ground will not be equipped with radio.

g. Appoint a Mission Flight Commander, who will be in command of all aircraft engaged in the search while in flight or away from the advance base, subject to the orders of the Mission Commander. It might be advantageous for each unit to have a permanent mission flight commander.

h. Brief pilots and observers on all information concerning lost aircraft, course and distance to be flown, minimum safe altitude over terrain, weather conditions, wind velocity and direction at various levels, and forecasted changes in wind and weather.

i. Assign areas to be searched.

j. Upon completion of a day's search, or when assigned area is covered or missing aircraft found, interrogate all air crews and relay consolidated information to Search and Rescue Officer.

k. Send all information for Form 15 fuel and lubricants to Liaison Officer.

l. Evaluate and check all rumors.

m. If crash is found:

(1) Make certain it is the aircraft for which you are searching. Search will continue until positive identification is made. The plane located may be a different one.

(2) Notify Search and Rescue Officer of exact position on Air Defense grid map.

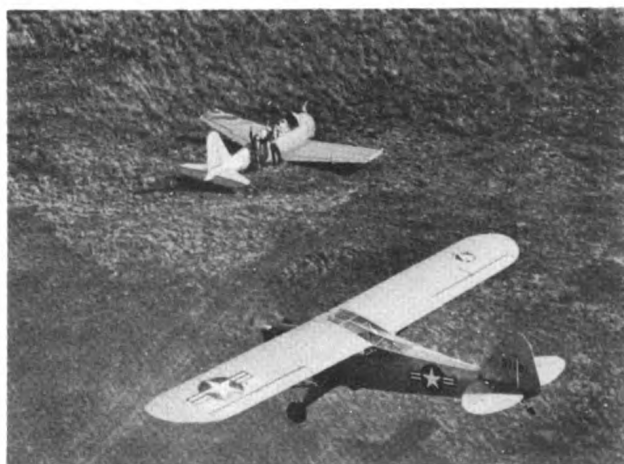


Figure 6-6.--Make sure the aircraft located is the one for which you were looking.

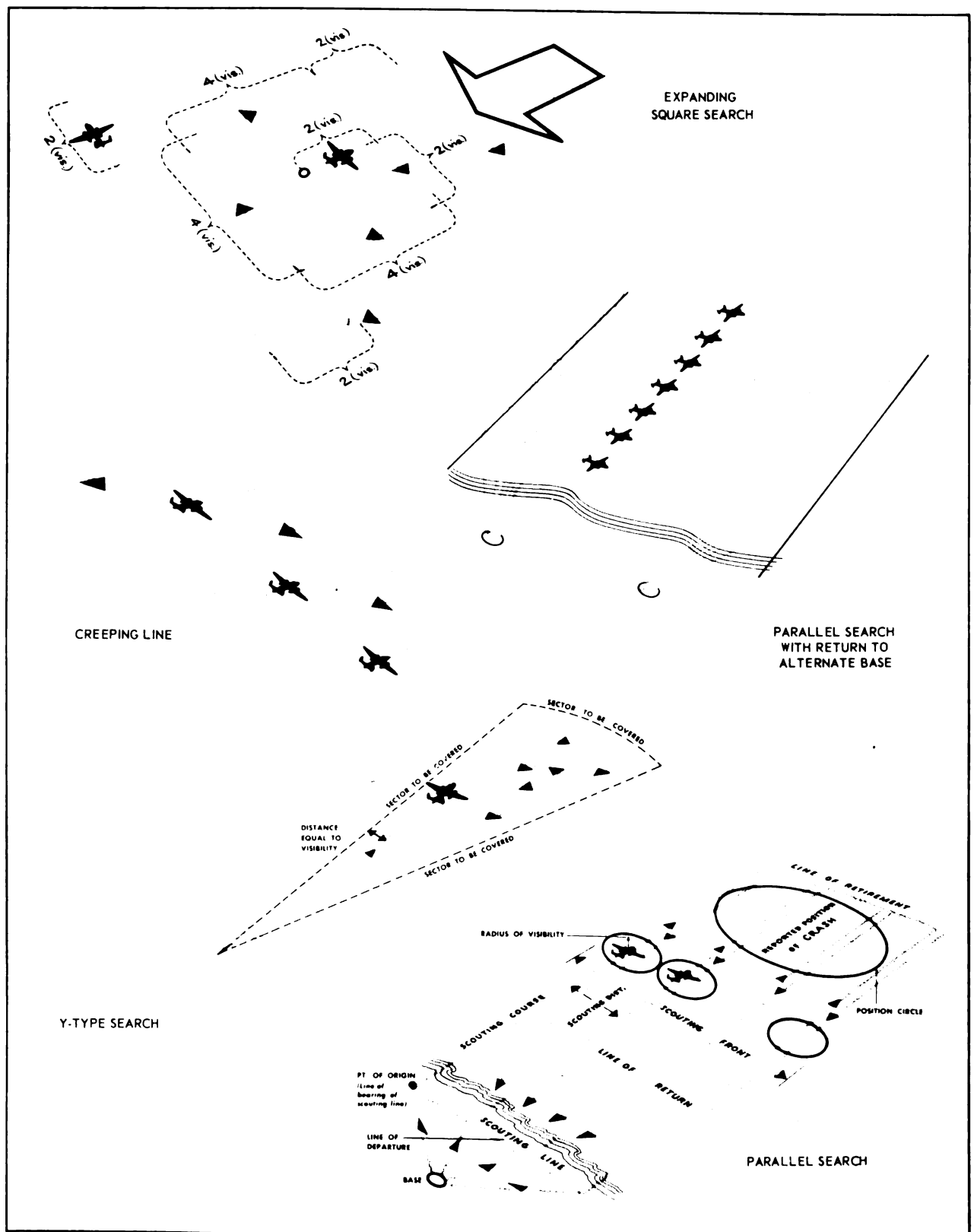


Figure 6-7.--Common types of aerial search.

- (3) Dispatch ground parties by fastest means available. It will be assumed there are living survivors until it is absolutely proved otherwise. If necessary, aircraft should be dispatched to guide ground parties and/or to drop food, blankets or medical supplies. It may be feasible to evacuate survivors by air.
- (4) Mark the crash if it is in an inaccessible area. It might also be well to keep one aircraft circling overhead until ground parties arrive.

Mission Flight Commander

4. Flight Commander will:

a. Issue orders to pilots as to search patterns to be used (parallel, contour, expanding square, creeping line, etc.), altitude, airspeed, and how far apart aircraft will search. In general, when two or more aircraft are employed for route search on parallel headings, the distance between planes will be a little less than twice visibility. A table of visibilities for typical objects of search under normal conditions is:

Man in Mae West	1/2 mile
Man in small lifeboat	3/4 mile
Crash in wooded area	1/2 mile
Man in wooded area	1/2 mile
Crash on open plain	2 miles
Man on open plain	1 mile or less

b. Unfavorable publicity and interruption of the search operation will result from the loss of search aircraft or personnel. Mission Flight Commander will make certain all aircraft have been inspected and that they and their equipment are in good working order. If overwater operations are involved, all air crews should be provided with life vests.

c. Designate airport where first landing will be made at end of route search if aircraft is not found.

d. Insure that all visual signals are understood by all pilots.

e. Interrogate crews upon landing.

f. Purchase fuel, when needed, on credit and obtain necessary Form 15 data.

g. Turn in results of air crew interrogation and Form 15 data to Mission Commander for consolidation.

FOR EMERGENCY USE ONLY!

The New Mexico Wing, Civil Air Patrol, has furnished you with the set of symbols shown below for use in case you are forced down in an aircraft, and wish to signal an aircraft circling overhead. Follow carefully the instructions listed below:

GROUND-TO-AIR SIGNALS

No.	Meaning	Symbol	No.	Meaning	Symbol
1.	Require doctor. Serious injuries.	I	9.	Probably safe to land here.	△
2.	Require medical supplies.	II	10.	Need fuel & oil.	L
3.	Unable to proceed.	X	11.	All well.	LL
4.	Require food and water.	F	12.	No.	N
5.	Require firearms and ammunition.	∇	13.	Yes.	Y
6.	Require map and compass.	□	14.	Not understood.	JL
7.	Indicate direction to proceed.	K	15.	Require engineer.	W
8.	Am proceeding in this direction.	↑			

INSTRUCTIONS

1. Lay out these symbols by using strips of fabric or parachutes, pieces of wood, stones, or any other available material.
2. Endeavor to provide as big a color contrast as possible between the material used for the symbols and the background against which the symbols are exposed.
3. Symbols should be at least eight (8) feet in height or larger, if possible. Care should be taken to lay out symbols exactly as depicted above, to avoid confusion with other symbols.
4. In addition to using these symbols, every effort is to be made to attract attention by means of radio, smoke or other means.
5. An aircraft rocking its wings from side to side will be signifying that your message is understood. A circle to the right will indicate that he does not understand.

FLY WITH SAFETY AND YOU WILL PROBABLY NOT NEED THIS CARD. HAVE IT HANDY, THO, IN CASE YOU DO

♦ ♦ ♦ ♦

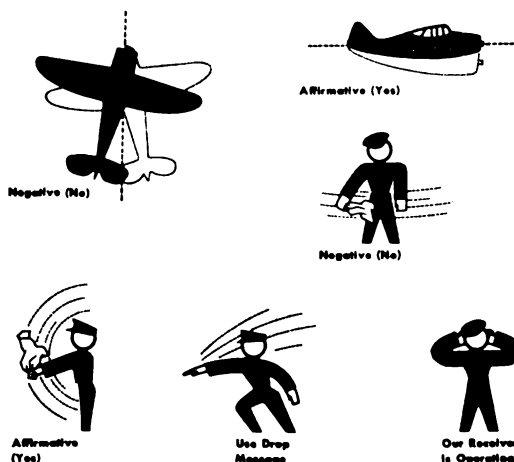


Figure 6-8.--Visual signals: ground to air and air to ground.

Release of Information

Although newspapers and radio stations can be of great assistance in search operations, under no circumstances should any information be given out by CAP personnel when a military aircraft is the object of the search. All such information MUST come from the Air Rescue Service. Information regarding searches for other aircraft, or for individuals, must be released only by a Public Information Officer, with authorization from the Wing PIO. The Wing PIO, in turn, should coordinate his efforts with the ARS to prevent confusion and conflicting stories. The part played by ARS should be noted in all releases.

Do not try to block newspapers and radio stations from obtaining information about aircraft accidents. They'll get it anyway, from other sources, and if such is the case, the information probably will be inaccurate. Co-operate with them as fully as possible, but try to keep the emphasis on the search rather than on the crash.

CAP personnel should make no contact with next-of-kin. That is the duty of the Public Information Officer.

REFERENCE

CAP Reg. 55-10 Search and Rescue.
CAP Reg. 60-Series Flying.
CAP Reg. 100-Series Communications.
CAP Reg. 45-1 Mobilization and Readiness Plan.

NATIONAL NET

Primarily as a means of facilitating communication in times of national emergency, but secondarily an important peacetime training and operations aid, the Civil Air Patrol has set up a radio network which blankets the United States and its territories, and is instantly available in the event normal communications channels should be disrupted.

With USAF-CAP equipment, including fixed, mobile, and portable types, the CAP is ready at a moment's notice to help fill the gap in any emergency, national, state, or local; to take some of the overload off commercial systems and to supplement the work of the military communications nets.

Organization. Radio communication in CAP actually is conducted through a series of five separate networks controlled at squadron, group, wing, regional, and national levels. The commanding officer at each of those levels is responsible for the organization and maintenance of radio nets which are capable

of handling operational, training, and emergency traffic to the subordinate units in his command. In addition, his headquarters must be capable of radio contact with the next higher headquarters.

The group headquarters station, and secondary stations comprising the squadrons and flights in the group, constitute a group net. Since every wing is not organized into groups, a wing may be divided into areas and a net control station which is comparable to a group headquarters station may be operated in each area. Assignment of such control stations usually is based either on a geographical division of the wing or on the number of squadrons and separate flights in the wing.

To regulate the flow of traffic between wings, eight regional nets, each consisting of a net control station and the assigned wing stations, also have been set up. Those nets, with their control stations, are as follows:

Region I.--Connecticut (NCS), Maine, New Hampshire, Vermont, Massachusetts, and Rhode Island.

Region II.--Pennsylvania (NCS), New York, New Jersey, Delaware, West Virginia, Virginia, Maryland, and National Capital.

Region III.--North Carolina (NCS), South Carolina, Tennessee, Georgia, Alabama, Mississippi, Florida, and Puerto Rico.

Region IV.--Ohio (NCS), Wisconsin, Illinois, Michigan, Indiana, and Kentucky.

Region V.--Nebraska (NCS), Minnesota, Iowa, South Dakota, and North Dakota.

Region VI.--New Mexico (NCS), Missouri, Kansas, Louisiana, Arkansas, Oklahoma, Colorado, and Texas.

Region VII.--Washington (NCS), Montana, Oregon, Idaho, Wyoming, Alaska, and Hawaii.

Region VIII.--California (NCS), Nevada, Utah, and Arizona.

The national radio net is composed of the national headquarters station at Bolling AFB, Washington, D. C., and the eight regional control stations. Only those regional stations are authorized to contact the national headquarters station, using CW. A message may originate at any level at any of the networks, however, and, flowing through the channels outlined above, reach the national headquarters station.

The CAP nets are utilized only for messages pertaining to the official activities of the CAP and for emergencies pertaining to the protection of life and property. No personal messages or business of a commercial nature is permitted to be transmitted.

Operations. Since operating procedures are similar at all levels of all nets, only the

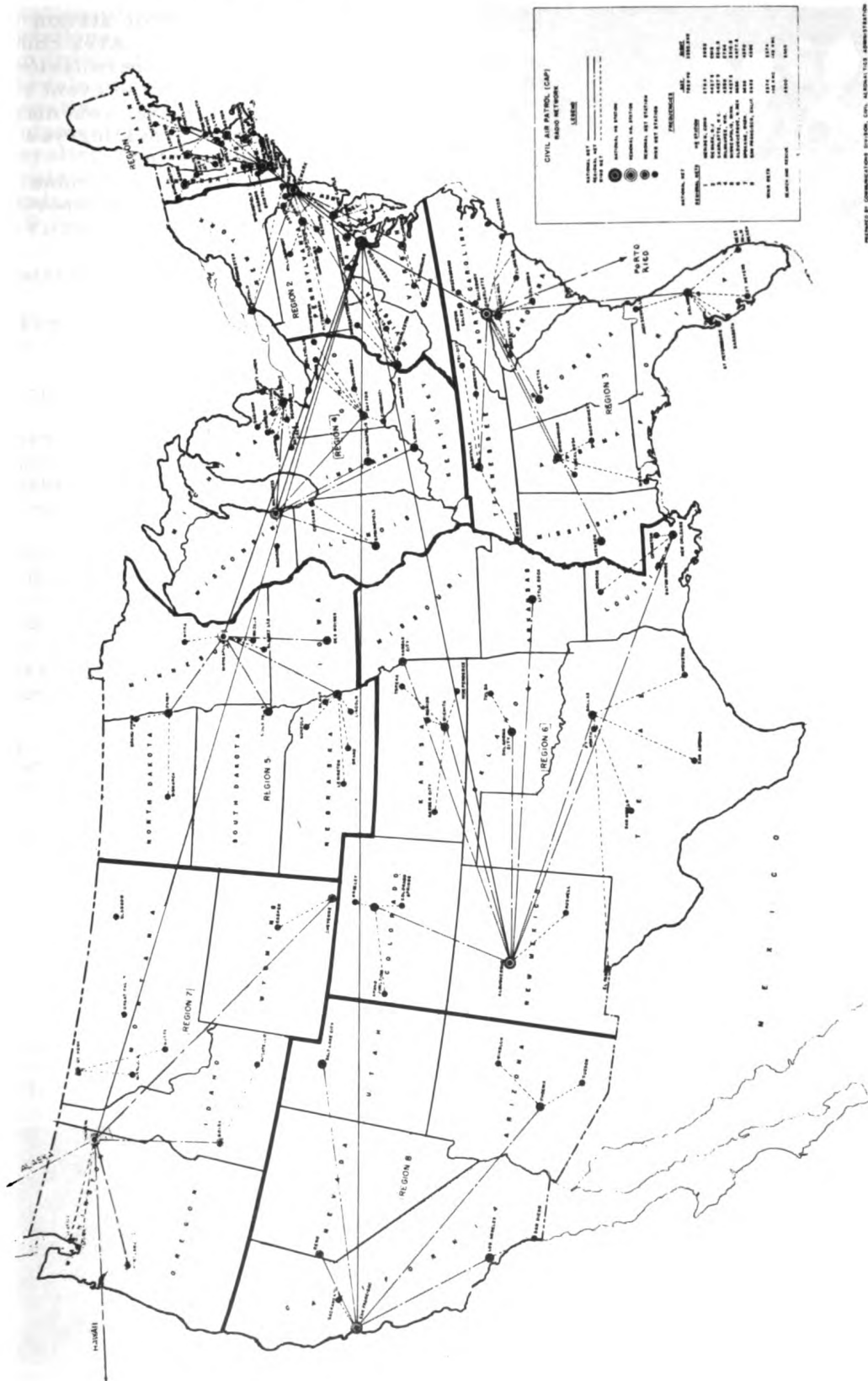


Figure 6-9. --CAP's National Radio Network.

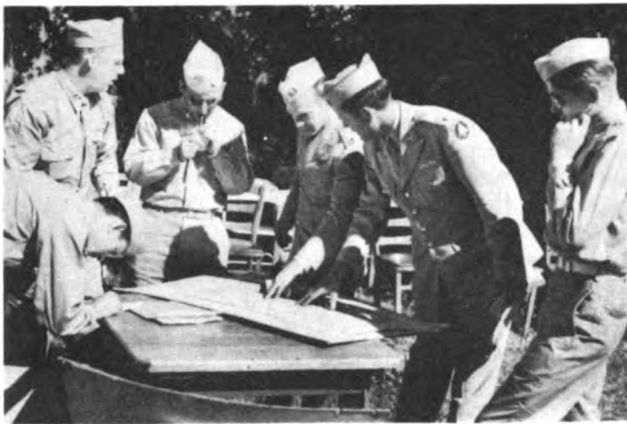


Figure 6-10.--Interrogation of an air crew.

area networks will be considered here. As in all other levels, each area has a control station, which alone of all the stations on the net is authorized to communicate with the next higher level.

Area control stations do not necessarily retain that status permanently. They are subject to change at any time for any of the following reasons.

1. Failure to keep station operating on schedule.
2. Failure to comply with all operating rules.
3. Poor location to handle traffic throughout the area.
4. Non-compliance with FCC regulations. This is most important, for while the USAF has stipulated that certain operating conditions must be met, the FCC Rules and Regulations are the basic authority governing aeronautical communications by CAP.

On drill nights, held twice weekly, the following procedures are expected.

1. Wing control station will call each of its area control stations and ask the operator of each to take the roll of the stations in his area.
2. Area control will then call each station in the area, and report back to wing as to the stations that have reported "in service."
3. Then net will then proceed with its tests and official traffic.

In all transmissions operating rules are standard.

1. Keep it short and to the point.
2. Limit transmissions to CAP business or to tests, except in cases of emergency.
3. An operator, before he goes on the air, will monitor the frequency for at least two minutes to make sure it is clear. He will

then call his area control station for permission to make his call. Area control stations will call wing for permission to call out of state stations. In the event your control station is off the air, you may call at your own discretion providing you are operating on scheduled time.

4. A record of all transmissions must be made, containing the time of operation, the station called, and the signature of the operator.

5. "Hamming" will not be tolerated. Some examples of "hamming" are:

- a. Allowing other than CAP personnel to talk on transmitter;
- b. Using improper phonetics;
- c. Using "ham" abbreviations; or
- d. Discussing personal matters.

6. Only USAF procedures as described in TM 1-460 will be used.

7. The transmitter must always be kept within 237 cycles plus or minus the assigned frequency.

8. The frequency of the transmitter must be tested at least once a month with a BC221 frequency meter or its equivalent.

9. The station license must be kept at all times with the transmitter to which it belongs.

10. Under no conditions will the transmitter oscillator or final amplifier be tuned with the antenna connected.

Communications Plan. It is highly important that all wings publish a complete communications plan, which should be distributed among all personnel in their networks so that all will have a complete understanding of operations and procedures within the wing.

The plan should cover:



Figure 6-11.--A regional control station.

1. Location of communications areas and control stations.
2. Map indicating equipment location.
3. Schedule of operation and drills.
4. Operating rules.
5. Equipment and frequencies.
 - a. Operating and maintenance rules.
 - b. Repair and maintenance rules.
6. Administrative organization chart.
7. CAP Regulation 100-2.

REFERENCE

CAP Reg. 100-Series Communications.
CAP Reg. 45-1 Mobilization and Readiness Plan.

CADET PROGRAM

Although it probably is the least dramatic of all of Civil Air Patrol's specific missions, the one in which the Air Force is most interested in the Cadet Program, which is designed to provide a pool of approximately 100,000 thoroughly indoctrinated youths for service in the USAF in the event of war.

While the emphasis in the cadet program is on ground and pre-flight training, however, the cadets are provided with opportunities for orientation flights in USAF aircraft, and they are active in every phase of the senior program as well.

The CAP has set up cadet enrollment quotas in the individual CAP wings as follows:

Alabama	1800
Arizona	400
Arkansas	1650
California	8000
Colorado	920
Connecticut	1675
Delaware	500
Florida	1500
Georgia	2000
Idaho	500
Illinois	6500
Indiana	3500
Iowa	2150
Kansas	1800
Kentucky	1800
Louisiana	1900
Maine	625
Maryland	1475
Massachusetts	3500
Michigan	6000
Minnesota	2300
Mississippi	750
Missouri	2500
Montana	500
Nebraska	1500

Nevada	500
New Hampshire	500
New Jersey	3425
New Mexico	600
New York	8000
North Carolina	2500
North Dakota	800
Ohio	6000
Oklahoma	1875
Oregon	1200
Pennsylvania	7500
Rhode Island	625
South Carolina	1000
South Dakota	500
Tennessee	2000
Texas	6000
Utah	1200
Vermont	1000
Virginia	1500
Washington	1500
West Virginia	1000
Wisconsin	3000
Wyoming	500
National Capitol	1500
Alaska	200
Hawaii	1500
Puerto Rico	1500

REFERENCE

CAP Reg. 30-Series CAP Cadets.

The various activities which comprise the cadet program are described fully in UNIT II.

PREPARATION FOR MOBILIZATION

All of the official missions and most of the unofficial activities of the CAP were set up



Figure 6-12.--A mobile unit in the field.

with just one end in view: the creation of a body of at least partly-trained men and young men who would be instantly available in an emergency.

Some, including nearly all of the cadets, would be utilized in the Air Force itself, while the others who, in another day, might have been regarded as "too old to fight" would spring at once to tasks which would release younger men with a higher degree training in military aviation for combat assignment.

Strictly speaking, preparation for mobilization is not a mission in itself but is the sum total of all of the other CAP activities: search and rescue, operation of the national communications net, the cadet program, disaster relief, and the myriad services which the civilian fliers perform for their communities.

All wings, however, should set up a definite mobilization plan so that all units can be brought to instant readiness when needed, and so they will fit smoothly, despite the expansion which war would bring, into the overall organization.

To insure that the men and skills and equipment are utilized to the fullest in the furtherance of the war effort, all CAP wings now have a coordinator of civil defense who serves on the staff of the wing commander and whose duty is to coordinate between Federal, State, county and city officials in fitting CAP into the local defense plans.

REFERENCE

CAP Reg. 45-1 Mobilization and Readiness Plan.

Unit VII

ACTIVITIES AND TRAINING SUBJECTS OF CIVIL AIR PATROL

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UNIT VII

ACTIVITIES AND TRAINING SUBJECTS

Unlike many organizations of a war-reserve character, the Civil Air Patrol is far more, in peacetime, than a mere training corps; it is a trained body of fliers who, along with their ground units, are instantly available for almost any emergency community service.

In time of crisis, CAP does everything from flying medical supplies to a snowed-in family on a blizzard-swept plain to directing traffic and protecting property against looters in a disaster area. Hardly a day goes by that a CAP unit is not called upon to render some vital, and sometimes spectacular, community service which calls forth the utmost in the skills it has acquired in its routine training program.

Unlike members of other reserve-type organizations, whose training is directed solely toward a war which may be in the far-distant future, CAP members have the continual satisfaction of active missions, of immediate objectives.

While most units may be called infrequently, the stories of action, month by month across the country, are a reminder that emergency may come to any unit at any time. Such an incentive toward readiness in peacetime is a powerful influence in keeping Civil Air Patrol always prepared for a national emergency, if and when it comes.

A brief summary of some of those activities follows.

EMERGENCY SERVICES

Emergencies may strike at any spot, at any moment, and in any variety of forms--a flood, a hurricane, an epidemic, a lost child, or a life which hinges on the speedy acquisition of blood plasma. And when they strike no matter where it may be, a CAP unit nearby is ready. These are some of the services which CAP provides.

Disaster Relief

In some wings, where the states themselves have set up comprehensive disaster relief plans, the role of the CAP usually is defined

by the state director of disaster relief and the units operate directly under his orders.

In most major disasters, however, CAP functions as the air arm of the American Red Cross, which maintains a nationwide disaster relief organization and is charged by the terms of its Congressional charter with the responsibility of providing aid to families and individuals in meeting disaster-caused needs: food, clothing, medical aid and supplies, evacuation if necessary, and other services.

Planning. Although CAP seldom will act on its own initiative in a disaster, many forward-looking wings have drawn up their own disaster plans so that they, with their personnel, aircraft and equipment may fit smoothly into the overall relief mechanism. Such plans take the following factors into consideration:

1. Areas of responsibility. As in the search and rescue plan, the wing should be divided into areas, with a control unit for each. The same plan, if comprehensive enough, may be used both for disaster relief and search and rescue.

2. Available means. Maintain complete, up-to-date records of all personnel, aircraft and equipment.

3. SOP for CAP-Red Cross cooperation. This includes designation in advance of the officers to be contacted in each organization, alerting procedure, logging of air or ground missions, and reimbursement agreements, if any.

4. Other cooperating agencies. Lists should be prepared of all agencies within the wing or the area which might prove helpful in an emergency, together with the names of the persons to contact, addresses, and both their office and home telephone numbers.

Red Cross responsibility. Since the CAP usually will be working as an auxiliary of, or in cooperation with, the Red Cross in any major disaster, it is well to examine some of the services the latter organization renders to disaster-affected persons and the aid it provides out of its own coffers. Here are some of them:

CAP responsibility. Under a joint understanding developed between the national headquarters of both organizations, the Civil Air Patrol has agreed to provide aerial transport and courier facilities, within the capabilities of the units affected, during disaster relief operations. All unit commanders have been authorized by CAP headquarters to provide that emergency service at the request of authorized Red Cross representatives. The agreement stipulates that the Red Cross shall reimburse the CAP or the owner of the aircraft for such flights in accordance with a fixed schedule of rates of payment.

In most cases, requests for such aid will come directly from the local chapter of the Red Cross in the disaster area, for in the Red Cross' nationwide disaster plan, each chapter is the medium through which emergency needs are met. In disasters so great that assistance beyond that available in the chapter jurisdiction is required, the national organization supplements chapter resources with personnel, supplies and funds as needed, and may take over financial and administrative control at the scene.

Other agencies. In its advance planning, CAP should avoid the establishment of services which would be a normal function of the ARC or of another agency with which the ARC has cooperative agreements similar to that with CAP. Among the other organizations with which the Red Cross has such understandings are:

1. The U. S. Army, which will make available supplies and services in the event of an emergency.
2. The U. S. Coast Guard, whose personnel, equipment and services are available to the Red Cross on call.
3. The U. S. Weather Bureau, which keeps the Red Cross informed of weather conditions, such as impending floods and hurricanes.



Figure 7-1.--Some CAP organizations have their own medical and surgical units.

4. American Medical Association, to strengthen cooperation between the Red Cross and the medical profession.

5. American Dental Association, providing for appointment of one or more dentists to the preparedness committee of each local Red Cross chapter, and for participation by the profession when disaster strikes.

6. American Legion, making manpower available to the Red Cross.

7. American Radio Relay League, providing for cooperation in providing emergency communications in time of disaster, a function which might well tie in with CAP's radio net and other communications activities.

8. National Association of Broadcasters providing for broadcasts of weather data and Red Cross appeals for funds and supplies.

9. National Restaurant Association, providing for emergency feeding of large numbers of persons in time of disaster.

10. Boy Scouts of America, providing for first aid, communications, and other services.

11. With the states. The Red Cross has written or verbal understandings in most states with the Governor, providing for mutual assistance in emergencies. Some states as noted above, have comprehensive disaster plans, in which the roles of both the Red Cross and CAP are fixed in advance.

Types of disaster. A disaster is a situation, usually catastrophic in nature, in which large numbers of persons are plunged into



Figure 7-2.--A CAP plane reports to an advance base on flood conditions in Oregon.

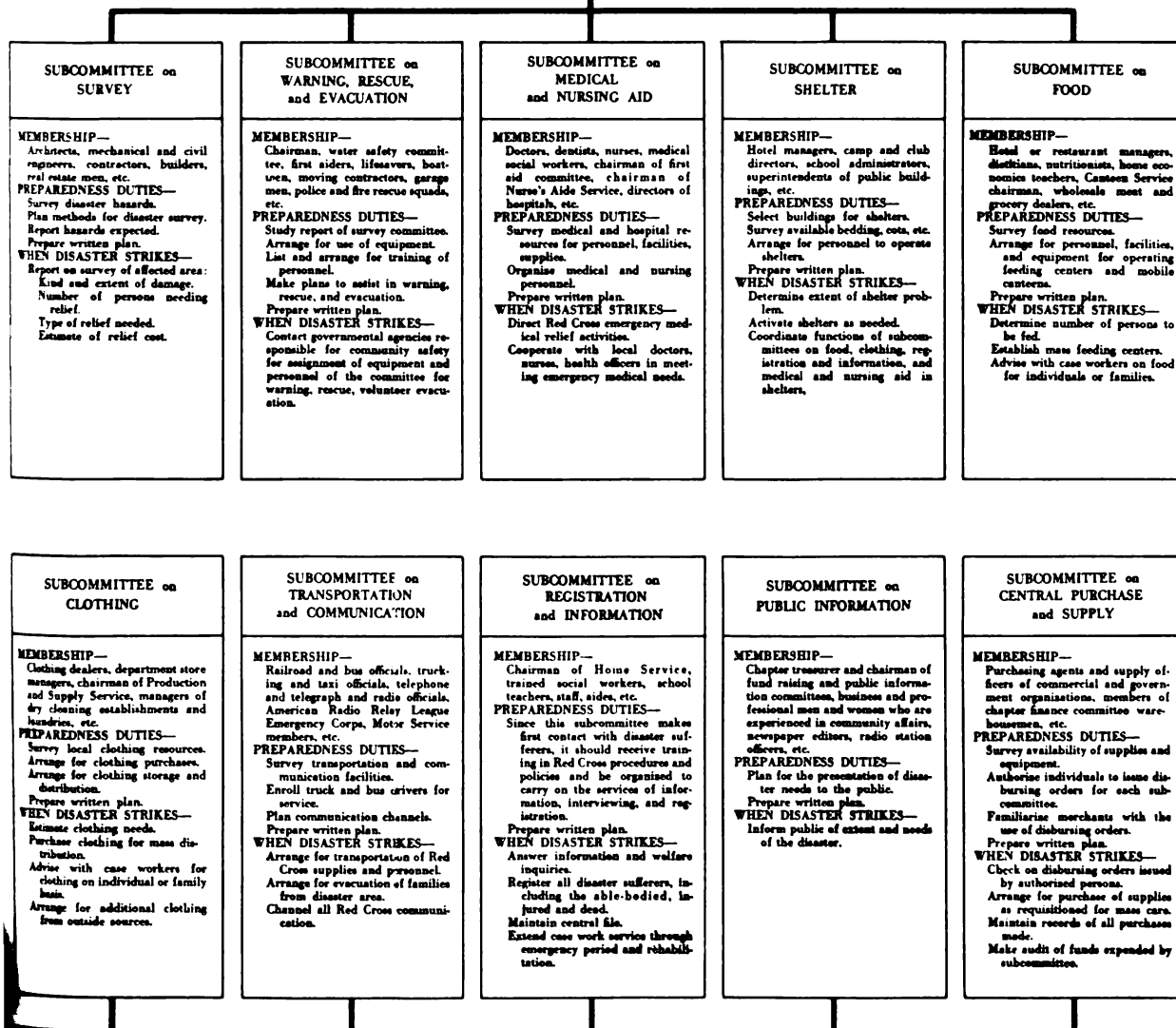
WHEN DISASTER STRIKES

The American National Red Cross

is notified by
CHAPTER CHAIRMAN
who directs the

CHAIRMAN
of Committee on
Disaster Preparedness and Relief

To assemble the following subcommittees as needed for survey and rescue and to provide food, clothing, shelter, and medical aid during the emergency period:



helplessness and suffering, and as a result may be in need of food, clothing, shelter, medical care, and other basic necessities. Disaster may strike in many forms, including:

1. Explosions, such as the tragic occurrence of 1947 at Texas City, Texas, when a whole town was razed.

2. Floods, such as periodically beset the valleys of the Mississippi and its tributaries.

3. Hurricanes and tornadoes.

4. Epidemics, where medicines and vaccines are needed in large quantities and where speedy transportation is imperative.

5. Blizzards, which frequently maroon families and sometimes whole communities. Some CAP units maintain horseback, dog team, and ski units against such eventualities.

Aerial Searches

Although all official search missions in which CAP participates must be authorized by the Air Rescue Service, many other unofficial searches are flown at the request of other agencies or individuals. In such cases, there is no reimbursement for fuel and lubricants unless private agreements are made with the agency or individual concerned.

Forest Patrol

Regular forest patrols are flown in a number of wings, in cooperation with state forestry services, during the forest fire season. As a result of such CAP aid, millions of dollars worth of timber have been saved by spotting blazes while they were small and easy to extinguish. During the



Figure 7-3.--Some wings maintain mounted units to aid in search and evacuation of injured.

Please Don't Let This Fire Escape

We Are Counting On You To Keep It Under Control

We all need wood more than ever. Wood for new homes and buildings—wood for repairs—wood for paper.

Wood plays an important part in everybody's daily life.

Fire in young timber leads to a serious wood shortage. Fire hurts young trees—trees that should furnish lumber for your children's use.

We know we can count on you to keep fire from escaping—that's why we're asking your aid.

Please mail the enclosed card and this message bag. (you don't even need to pay postage). Just fill in your name and address. It will show that you are doing your part too.

We are giving our time and using our planes to help the Texas Forest Service of A. & M. College keep down woods fires.

Thanks For Your Help

Civil Air Patrol

Figure 7-4.--This leaflet, dropped by fliers of the Texas Wing, has saved thousands of acres of valuable timber.

war, when conservation of timber supplies was of vital importance, the Texas wing served as an official auxiliary of the Texas State Forest Service.

Drop Missions

CAP units frequently are called upon in cases of individual emergency to drop food, clothing, or medicines to persons in distress, and even, in some cases, provide such services for animals. They took part in the dramatic Operation Haylift, when starving cattle in the West were fed from the air during the storm of 1949, and frequently have been called upon by conservation agencies to drop hay and feed to starving deer, elk and moose when unseasonal storms cut off the feed supplies of those animals.

Other Flying Chores

There is almost no mission, no matter how unusual, that some CAP unit has not been called upon to perform at some time or

another, for every CAP organization must serve as a sort of aerial "odd-job man" for its community.

One CAP unit was called upon to chase thousands of wild ducks away from the California rice fields, to save an entire crop from destruction. Another was pressed into service to fly night-long, hedge-hopping patrols over Florida orange groves during a cold snap, to keep the air circulating and prevent the fruit from freezing. Several wings have organized aerial hunts for wolves and coyotes in cooperation with the U. S. Wildlife Service and state conservation agencies.

Timber surveys, courier missions for public agencies, and even an aerial prospecting project for minerals have come within CAP's orbit. If it's a public service, you can name it and the chances are some CAP unit has done it.



Figure 7-5.--CAP goes to the rescue of starving animals during the Big Freeze.



Figure 7-6.--A swamp buggy used by the Florida Wing can reach spots inaccessible to search parties on foot or in motor vehicles.



Figure 7-7.--Several CAP wings maintain snow-shoe, ski and dog-sled units to supplement the efforts of aerial searchers.

REFERENCE

- CAP Reg. 45-1 Mobilization and Readiness Plan.
- CAP Reg. 55-10 CAP Participation in Search and Rescue Missions as an Auxiliary of the Air Rescue Service.
- Reg. 60-1 & 1A Provisions Governing Flights of USAF Aircraft on loan to CAP.
- Reg. 76-Series Air Transportation.
- CAP Weekly Bulletin #22 17 June 49-Emergency Air Transportation for ARC.

AIR MARKING

PURPOSE.--Far more vital than the highway markers and guideposts to the motorists, air markers not only facilitate travel but save many lives.

Radio navigational devices, to tell the pilot his position at all times, are not yet prevalent in private flying. Until the light planes of the country are thus equipped, most of the private flying will be in daytime under Visual Flight Rules.

For novice pilots, and even among those with many hours aloft, it is all too easy to get lost, especially over terrain on which there are no prominent features as check points. A marker, which can be read from the air, is a positive check on location.

Efforts have been made in recent years to develop markers on cross country routes likely to be most traveled, for a series of "Skyways" traversing the entire continent.

The job will not be done, however, until an air marker is set in each community, whether on or off the overland routes, and in many unpopulated areas as well.

METHODS.--Standard methods and materials for air marking should be employed. To depart from these standards may make the job ineffective or may confuse the pilot trying to find his way.

A marker consists of the name of the town, an arrow pointing to the nearest airport with a figure showing the number of miles, and the latitude and longitude. Dimensions and style of letters and figures are standardized.

The usual place for a marker is on a large roof, painted or set in the roofing material. Sometimes markers are made of painted rocks set in hillsides or prairies.

Cooperation in technical advice, and sometimes in supplying paint and materials, may be secured from Civil Aeronautics Administration and the State Aviation Commission, but there is much work for a unit of Civil Air Patrol to do.

Selecting the site and getting permission of the owner to set a marker on the land or building must first be done. Then the standard lettering must be outlined in chalk or otherwise. Where a number of markers are to be set, folding plywood templates may be made for the purpose.

Applying several gallons of paint to the big letters may be done in a single day if there are many volunteers. In this, CAP may go to some civic group if its own members in the area are too few. Or it may be preferable to raise funds and hire a painter. CAP cadets, boys and girls calling on local business men, may get the money by asking a few dollars each.

Publicity is important both as a means of getting support for the project and to stimulate local interest in aviation and in Civil Air Patrol. Others who cooperate should be given liberal credit.

Flying the mayor or other prominent local citizen over the completed marker and photographing it from the air are among the events that can be arranged for newspaper and radio.

Future maintenance must not be forgotten. The lettering may become dim in a few years so a new coat of paint will be needed.

Testimonials, for permanent record, are important to keep the marker idea sold. The story of a pilot, lost and low on fuel, suddenly spotting a marker and coming safe into the airport, has been many times repeated. Wherever it happens, the nearest CAP unit should get full particulars--names, airplane number, time, witnesses, and a signed state-

ment from the pilot if possible. A full report should be forwarded to CAP National Headquarters through State Wing Headquarters.

If the marker was set by CAP, all who shared in the laborious job may take pride that they actually saved one or more people either from death or serious injury.

Kinds and Types of Air Markers

The 3 most common kinds of air markers with which the airman and the general public are familiar are the airport hangar marker, airport ground circle marker, and the airport direction marker.

Airport Hangar Marker.--The airport hangar marker is a circle of chrome yellow with a black border of one-half the stock used to indicate and specifically identify an airport. Inside the circle will be shown the latitude and longitude in degrees and minutes separated by an arrow indicating true north. The circumference of the circle and the size of the numerals therein shall be governed by the roof space. Underneath the circle, the name of the airport will be painted in ten-foot letters. See illustration.

Airport Ground Circle Marker.--Airport circle markers are constructed at airports and auxiliary landing fields to assist in identifying the landing area. Circle markers are most effective at airports which have turf runways as they readily indicate the numbers and direction of the established runways.



Figure 7-8.--Airport Hangar Marker.

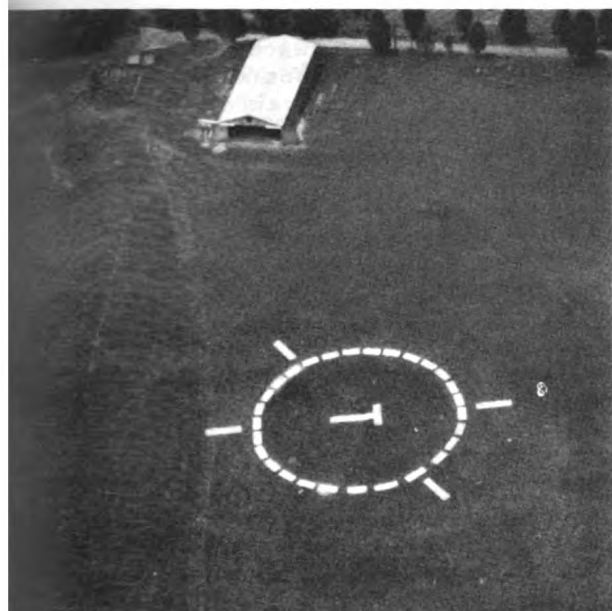


Figure 7-9.--Airport Ground Circle Marker.

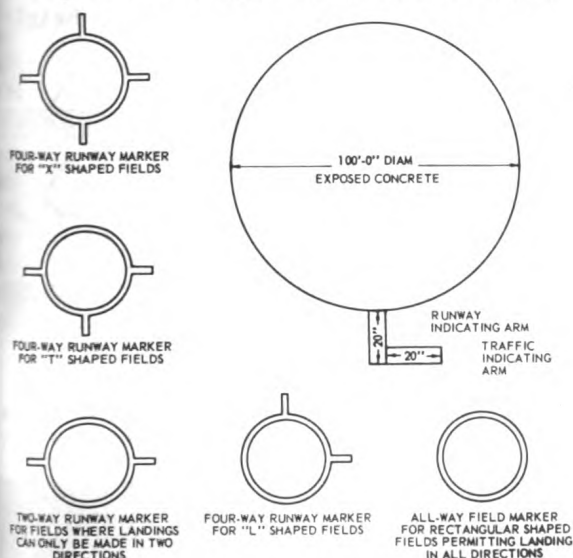


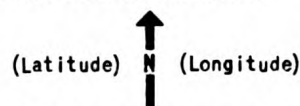
Figure 7-10.--Types of Airport Ground Circle Markers.

Airport Direction Marker.--Direction markers are designed to identify the location of the marker itself and to give accurate directions to the nearest airport of the principle city. Seven general types are recommended for use as air navigation aids:

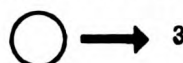
1. Roof marker.
2. Highway marker.
3. Illuminated marker.
4. Raised marked--baked enamel, porcelain, metal, wood.
5. Crushed stone or concrete marker.
6. Marker for size of buildings and water tanks.

7. Landscape marker for parks and along highways.

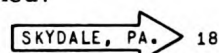
Each marker should show, as well as the name of the town, the latitude and longitude in degrees and minutes and an airport direction marker indicating the nearest airport. The latitude and longitude are to be specified by the meridian or north marker, the latitude being placed to the west and the longitude to the east of the north marker.



The symbol that is used to indicate the nearest available airport is a circle with an arrow pointing to such airport and the distance in miles at the head of the arrow.



The symbol to be used to indicate the nearest airport having at least one hard-surfaced runway 3000 feet in length is an arrow inclosing the name of and pointing to such airport with distance in miles at the head of the arrow underlined.



The name in the arrow should be placed so as to read from the tail to the head of the arrow. In the event the airport is above sea level, the minimum length runway should be 3000 feet plus 5 percent of the 3000 feet for each 1000 feet above sea level.

Roof Marker.--One of the most effective air markers is painted on roofs. Large flat, hip and gable roofs are conspicuous land marks to flyers and are adapted naturally to air



Figure 7-11.--Roof Marker.

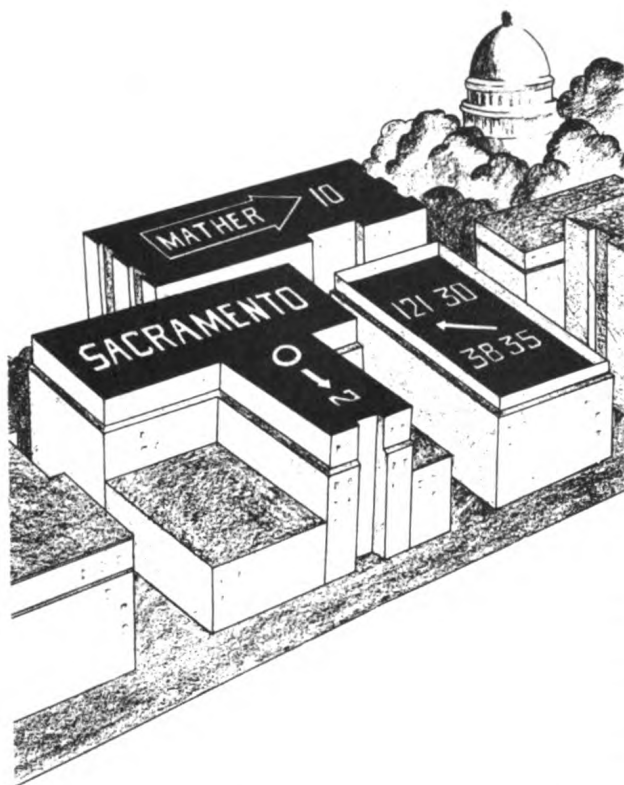


Figure 7-12.--Roof Markers, Utilizing Several Roofs.

marking because they furnish an even background and the airmarking is less likely to be obstructed by dirt, dust and snow. Such markers when properly painted, may remain clear and legible for three years or more. The selection of a location for a roof marker should, as far as possible, be a permanent one not far from the center of the community or near a main highway or railroad. A view of the roof should not be obstructed by overhanging trees or tall adjacent buildings, nor located where it will be obstructed by smoke from nearby stacks. Where a single roof of sufficient size is not available, the marker may be painted on a group of roofs by placing one complete unit of the marker on each.

Ground Marker.--Markers constructed on the ground should be placed in open space away from trees or other obstructions. Public parks or the grounds of public institutions

are often suitable locations. Privately owned property may also be used. Many desirable locations may also be found in cleared hills, mountains, and open terrain along prospective air routes. Two commonly recommended methods of constructing air markers on the ground are:

1. By construction with crushed stone or gravel, bound with a cement or sand mixture or some other suitable binder.
2. By construction with crushed stone or gravel or other suitable aggregate without binder.

The first method is preferable though having higher initial construction cost, is less expensive to maintain, and is of a more permanent nature.

Raised Marker.--Raised markers may be constructed of various types of material--enamel, porcelain and metal are recommended for permanency, although wooden markers properly painted and periodically serviced are acceptable. Raised markers consist of approved-sized letters and figures elevated above the background to convenient heights.

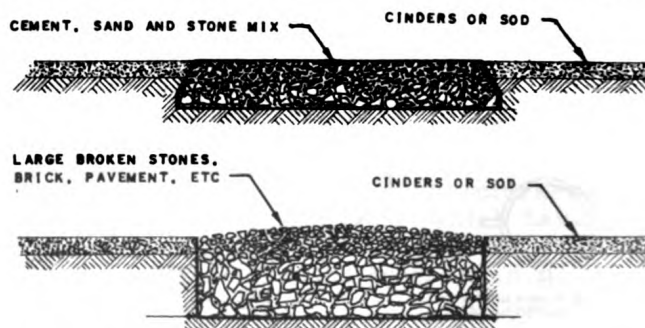


Figure 7-13.--Cross sections of cement-bound stone marker (top) and loose stone ground marker (bottom)

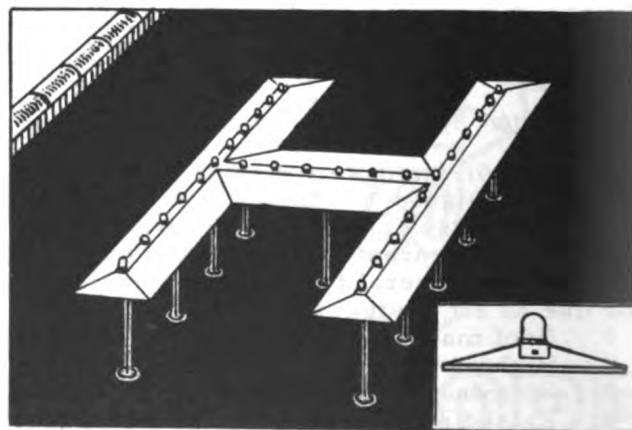


Figure 7-14.--Method of raising letters of air marker above the roof to prevent sign from being obscured by snow, dirt, etc. Illumination of the letter by exposed incandescent lamp also is shown.

by means of wood or metal supports. Such raised markers may be installed on the ground, on roofs, or on the sides of buildings where appropriate.

Highway Marker.--Markers should be laid out on highways in a similar manner to the markers on roofs and painted with 2 coats of good grade traffic paint. Care should be taken that the markers are located along open stretches of road away from overhanging trees, tall buildings and other obstructions.

Landscape Marker.--This type of marker should lend itself nicely to airports, public parks and educational institutions. The size should conform to the standard 20-foot letters and the flowers and shrubbery should be as light in color as possible, with a contrasting border outlining the letter, numerals, and characters.

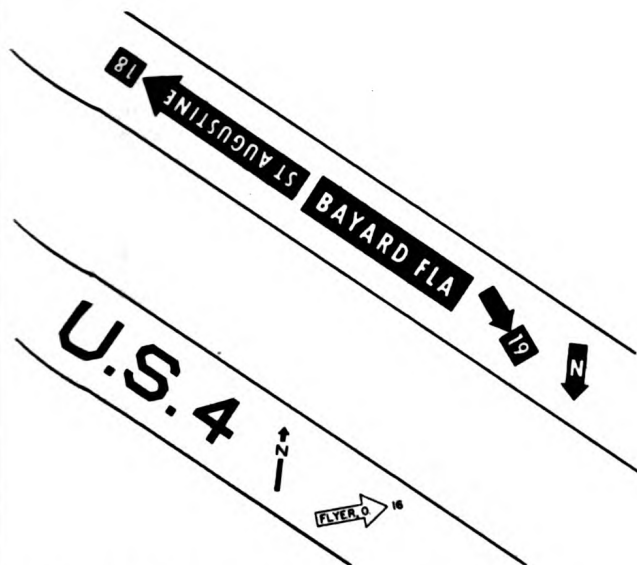


Figure 7-15.--Two types of highway markers.

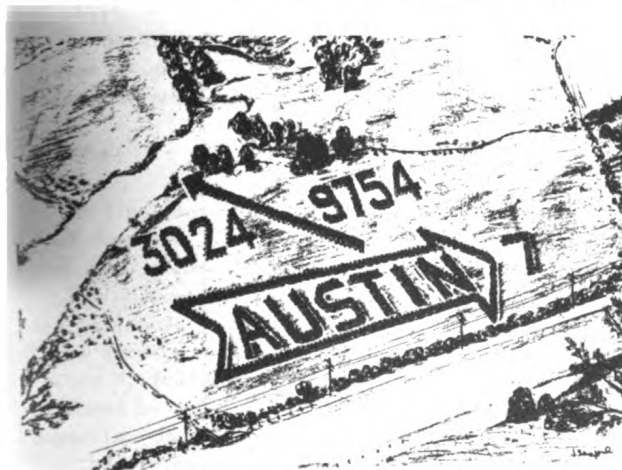


Figure 7-16.--Landscape Marker.

Illuminated Marker.--In order that air markers may serve their full purpose, it is desirable that they be illuminated at night. However, because of the high construction, operation, and maintenance costs of illuminated signs, it may not be practical to install them in many localities. The problems involved in illuminated markers are fundamentally the same as those encountered in illuminated large advertising signs. The 2 main methods of illumination are by direct and reflected lighting. In direct lighting, the markers are illuminated by exposed incandescent lamps preferably placed along the center line of the strokes of the letters and characters. Reflected light is produced either by floodlight projectors with spread lenses or by individual reflectors arranged to give a uniform distribution of light of proper intensity over the entire surface of the marker. The reflected light method of illumination is the simplest to install and gives good results if the markers are kept clear and free from snow and other obstructions, but it does not have the attracting power of the other systems. Illuminating fixtures should be installed only under the direction of a qualified electrician to insure the installation of proper circuits and voltages in observance of the National Safety Code published by the National Bureau of Standards of the United States Department of Commerce.

Letters, Numerals and Characters

The legibility of air marking signs depends, in addition to the color combinations used, on the size, shape, and spacing of letters, numerals and characters. For markers constructed on roofs, a letter size of 10 feet to 20 feet is recommended; a 20-foot marker will be 2 feet 6 inches wide and have a border of 1 foot 3 inches.

A 10-foot marker will be 1 foot 3 inches wide and have a border 7-1/2 inches wide; a 7-foot marker will be 10-1/2 inches wide and have a border 5-1/2 inches wide; and a 5-foot marker will be 7-1/2 inches wide and have a border 3-3/4 inches wide.

Templates.--In order to expedite the laying out of the marker and to insure accuracy in size and spacing, templates may be used. There are 3 templates to a set and these 3 patterns will make each letter in the alphabet as well as the numerals. Templates can be made of metal, plywood, or wall board, with hinges in the center so that they can be folded and easier to transport from one location to another.

Templets can be made in 3 sizes to produce letters 5 feet, 7 feet or 10 feet high. When

KEY FOR DETERMINING SPACING OF LETTERS

	2 1/2	2 1/4	2	1 3/4	1 1/2	1 1/4	1	3/4	1/2	0
A					BDEFHI KLMNPR	U	CGOQSZ	AX	JTW	VY
B			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
C			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
D			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
E				BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V	
F						BDEFHI KLMNPR	U	CGOQST VWXYZ		AJ
G			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
H	BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V				
I	BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V				
J		BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V			
K				BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V	
L						BDEFHI KLMNPR	U	ACGOQS XZ	J	TVWY
M	BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V				
N	BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V				
O			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
P					BDEFHI KLMNPR	U	CGOQSZ	TVWXY	AJ	
Q			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
R			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
S			BDEFHI KLMNPR	CGOQSU	Z	X	AJTWY	V		
T					BDEFHI KLMNPR	U	CGOQSZ	TVWXY	A	J
U		BDEFHI KLMNPR	U	CGOQSZ	X	AJTWY	V			
V						BDEFHI KLMNPR	U	CGOQST VWXYZ		AJ
W					BDEFHI KLMNPR	U	CGOQSZ	TVWXY	A	J
X				BDEFHI KLMNPR	U	CGOQSZ	X	AJTVW Y		
Y					BDEFHI KLMNPR	U	CGOQSZ	TVWXY		AJ
Z			BDEFHI KLMNPR	U	CGOQSZ	X	ATVWY	J		

KEY FOR DETERMINING SPACING OF NUMBERS

	2 1/2	2	1 3/4	1 1/2	1	3/4				
1	1	2 3 4 5 6 8 9 0		7						
2		1	2 3 5 6 8 9 0	4	7					
3		1	2 3 5 6 8 9 0	4	7					
4		1		2 3 4 5 6 8 9 0	7					
5		1	2 3 5 6 8 9 0	4	7					
6		1	2 3 5 6 8 9 0	4	7					
7				1	2 3 4 5 6 8 9 0	7				
8		1	2 3 5 6 8 9 0	4	7					
9		1	2 3 5 6 8 9 0	4	7					
0		1	2 3 5 6 8 9 0	4	7					

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Figure 7-17.--Key for determining spacing of letters and numerals.

KEY TO DIMENSIONS

DIMENSIONS FROM "b" TO "n"

Height of letter "a"	b	c	d	e	f	g	h	i	j	k	l	m	n
Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.
5-0	0-3	8-4 ¹ / ₂	0-6	0-7 ¹ / ₂	6-09	10 ¹ / ₂	1-0	1-1 ¹ / ₂	1-3	1-4 ¹ / ₂	1-6	1-9	2-0
7-0	0-4 ³ / ₁₆	8-6 ⁵ / ₁₆	0-8 ³ / ₈	0-10 ¹ / ₂	1-0 ⁵ / ₈	1-2 ¹ / ₁₆	1-4 ¹ / ₁₆	1-5 ⁷ / ₈	1-5	1-11 ¹ / ₁₆	2-1 ³ / ₁₆	2-5 ³ / ₈	2-9 ⁵ / ₈
10-0	0-6	0-9	1-0	1-3	1-6	1-9	2-0	2-3	2-5	2-9	3-0	3-6	4-0
15-0	0-9	1-1 ¹ / ₂	1-6	1-10 ¹ / ₂	2-3	2-7 ¹ / ₂	3-0	3-4 ¹ / ₂	3-9	4-1 ¹ / ₂	4-6	5-3	6-0
20-0	1-0	1-6	2-0	2-6	3-0	3-6	4-0	4-6	5-0	5-6	6-0	7-0	8-0
25-0	1-3	1-10 ¹ / ₂	2-6	3-1 ¹ / ₂	3-9	4-4 ¹ / ₂	5-0	5-7 ¹ / ₂	6-3	6-10 ¹ / ₂	7-6	8-6	10-0
30-0	1-6	2-3	3-0	3-9	4-6	5-3	6-0	6-9	7-6	8-3	9-0	10-6	12-0
35-0	1-9	2-7 ¹ / ₂	3-6	4-4 ¹ / ₂	5-3	6-1 ¹ / ₂	7-0	7-10 ¹ / ₂	8-9	9-7 ¹ / ₂	10-5	12-3	14-0
40-0	2-0	3-0	4-0	5-0	6-0	7-0	8-0	9-0	10-0	11-0	12-0	14-0	16-0
45-0	2-3	3-4 ¹ / ₂	4-6	5-7 ¹ / ₂	6-9	7-10 ¹ / ₂	9-0	10-1 ¹ / ₂	11-3	12-4 ¹ / ₂	13-5	15-9	18-0
50-0	2-6	3-9	5-0	6-3	7-6	8-9	10-0	11-3	12-6	13-9	15-0	17-6	20-0

DIMENSIONS FROM "o" TO "z"

Height of letter "a"	o	p	q	r	s	t	u	v	w	x	y	z	
Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	Pt. In.	
5-0	2-3	2-6	2-9	2-10 ¹ / ₂	3-0	3-1 ¹ / ₂	3-4 ¹ / ₂	3-6	4-6	5-6	6-0	7-6	
7-0	3-1 ¹ / ₁₆	3-6	3-10 ³ / ₁₆	4-0 ⁵ / ₁₆	4-2 ³ / ₈	4-4 ¹ / ₂	4-8 ¹¹ / ₁₆	4-10 ³ / ₁₆	6-3 ⁵ / ₈	7-8 ¹ / ₈	8-4	10-5	
10-0	4-5	5-0	5-6	5-9	6-0	6-3	6-9	7-0	9-0	11-0	12-0	15-0	
15-0	6-9	7-6	8-3	8-7 ¹ / ₂	9-0	9-4 ¹ / ₂	10-1 ¹ / ₂	10-6	13-6	16-6	18-00	22-6	
20-0	9-0	10-0	11-0	11-6	12-0	12-6	13-6	14-0	18-0	22-0	24-0	30-0	
25-0	11-3	12-6	13-9	14-4 ¹ / ₂	15-0	15-7 ¹ / ₂	15-10 ¹ / ₂	17-6	22-6	27-6	30-0	37-6	
30-0	13-6	15-0	16-6	17-3	18-0	18-9	20-3	21-0	27-0	33-0	36-0	45-0	
35-0	15-9	17-6	19-3	20-1 ¹ / ₂	21-0	21-10 ¹ / ₂	23-7 ¹ / ₂	24-6	31-6	38-5	42-0	52-6	
40-0	18-0	20-0	22-0	23-0	24-0	25-0	27-0	28-0	36-0	44-0	48-0	60-0	
45-0	20-3	22-6	24-9	25-10 ¹ / ₂	27-0	28-1 ¹ / ₂	30-4 ¹ / ₂	31-6	40-6	49-6	54-0	67-6	
50-0	22-6	25-0	27-6	28-9	30-0	31-3	33-9	35-0	45-0	55-0	60-0	75-0	

To simplify laying out letters of different heights, the dimensions on the letter drawing are marked in lower case alphabet from "a" to "z". "a" equals letter height.

For dimensions from "b" to "n", use the top half of chart. For dimensions "o" to "z", use the bottom half of chart.

To determine a dimension in feet and inches, read down left hand column marked "Height of Letter--"a", to the height of letter you are using, then read across to the column under the same letter as found in the desired dimension on the letter drawing.

EXAMPLE:

To find the linear measurement of letter A, marked as dimension "v", when laying out a ten foot letter, read down the "Height of Letter--"a" column at the left on the lower half of chart to where it states 10'-0", then read across to the column headed "v" to find the correct dimension of 7'-0".

The purpose of the key for determining the spacing of letters is to simplify the layout of an air marker and to insure perfect spacing between both letters and numerals. For instance, to determine the number of units between A and N, find A on the left hand side of the page then follow that column to the right to the letter N; follow that column upward to the top of the page where the letter f is found. Dimension of f can be found by referring to the table key to dimensions. The same method is used in determining the spacing of numerals. In using this key, letters and numerals will be perfectly spaced and any chance of running letters together which might cause a blur from the air will be eliminated.

Figure 7-18.--Key to dimensions of letters and numerals for air marking.

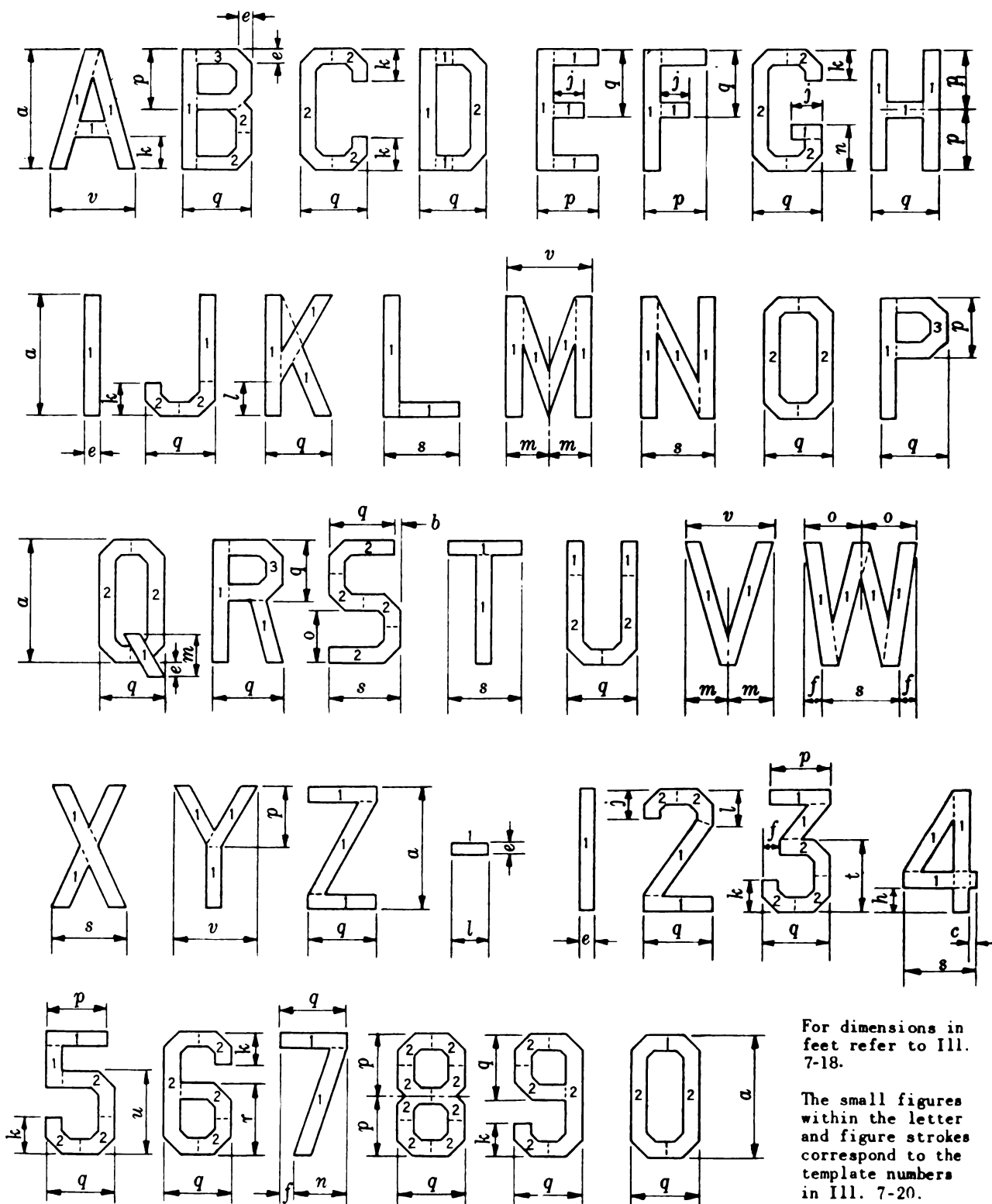


Figure 7-19.--Template diagrams for plain block letters and numerals.

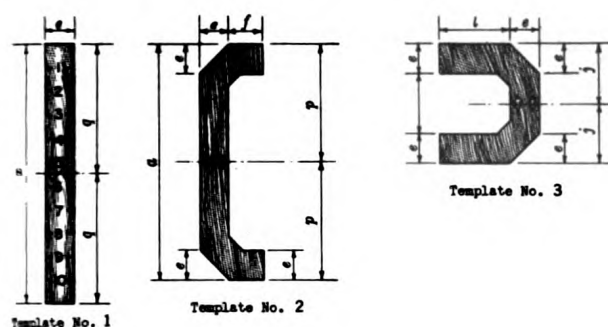


Figure 7-20.--Templates for Air Markers.

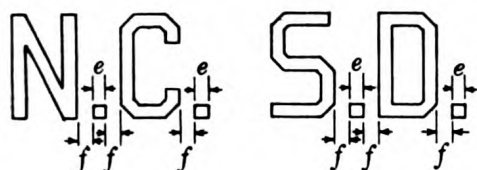


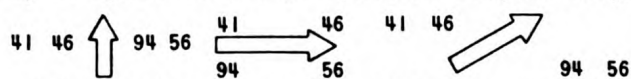
Figure 7-21.--Letter Spacing.

making templets for air markers they should be 10 feet by 1 foot 3 inches, except that templets #1 should be 11 units high to allow for laying out letter A, K, W, etc.

It is recommended that a chart of instructions which provides a key for determining the spacing of letters be used as a means of simplifying the layout of proposed air markers. In using this key, letters and numerals will be perfectly spaced and any chance of running letters together which might cause a blur when viewed from the air, will be eliminated. See illustration.

Accuracy of Directions.--An accurate map and a good compass should be used taking into consideration in the use of the compass, the magnetic declination of the section of the country in which the marker is to be constructed. In using a magnetic compass, care should be taken to correct for the magnetic effects of metal roofs, power lines and other nearby metal objects. The latitude and longitude must be carefully determined from the latest edition of the latest United States Sectional Aeronautical Charts, scale 1:500,000. In case of doubt as to the position of the town, inquiry should be made to the Director, United States Coast and Geodetic Survey, Washington 25, D. C. These coordinates are to be indicated on the marker in degrees and minutes, the last 2 digits of each always being the minutes and well separated from the degrees by standard spacing. The latitude will be separated by an arrow pointing true north. The latitude always being placed to the west and the longitude to the east of

the arrow. There will be 4 units between the last digit of the minutes of the latitude and the north arrow and 4 units from the north arrow to the first digit of the degrees of longitude. For example: the town of Ross, latitude 41 degrees, 46 minutes and longitude 94 degrees, 56 minutes would be indicated by 41 space 46 and 94 space 56 respectively.



Color Combination.--The distance at which air markers are legible depends largely upon the degree of contrast between the characters and the background. Best results are obtained by using the light color for characters and a dark color for the background or border. When a border is used it should be $1/2$ the stroke or $1/2$ the width of the letter. Chrome yellow of any good grade of highway paint may be used for the characters with the border or background of dead black. All painting should be done in a careful and workman like manner and should be conducted under the supervision of a skilled painter. The condition of the surface as well as type of surface will determine the kind of paint and the method to be used.

Name of Town.--The name of the town should be placed in minimum 10 foot letters. When an airport arrow is used the letters included in the arrow should be 7 feet in height. The number of miles at the head of the arrow should also be 7 feet in height, as well as the latitude and longitude. The name should read from the tail to the head of the arrow.

How to Get Started

An inquiry should be submitted to the State Director of Aeronautics to determine if funds are available to assist with this project. When funds are not available it should not be difficult to obtain the small amount of money required from local sources. Paint is the principal expense. In many communities the assistance of the Lions, Rotary, 20-30, Kiwanis Clubs or other service organizations has resulted in a highly successful program of air marking.

Details of Air Marking

Before undertaking the installation of an air marker, a thorough study should be made of the Air Marking Guide, published by the Civil Aeronautics Administration. State Directors of Aeronautics or CAA will be glad to assist with the designing of air markers. A release (permission in writing from the

owner) should be obtained prior to the installation of the marker. A sample release will be found in the Air Marking Guide. Upon completion of an air marker, the State Director of Aeronautics should be notified immediately, and a duplicate copy of the air marking report forwarded to the CAA at Washington, D. C. The marker will be flight checked by CAA or an authorized representative and upon approval the town or marker will be designated on subsequently published aeronautical charts.

REFERENCE

For full information, write Air Marking Section, Civil Aeronautics Administration, Washington 25, D. C.

PHOTOGRAPHY

1. Purpose: a. To utilize photography as an aid in the accomplishment of routine CAP functions and assigned missions as well as to record special and historic events.

b. To provide a basic course which will serve as an introduction to the subject of photography and the foundation for supplementary courses of a more advanced or technical nature.

2. General: The objectives for the CAP photographic course should be:

a. To give the student an understanding of basic photography, so that his practice of photography will be an intelligent application of principle rather than a blind approach of rules-of-thumb.

b. To give the student sufficient and varied practical experience, so that he will be familiar with common procedure in photography and develop efficient working methods.

c. To impart a knowledge of the use of photography as an implement in many professions and occupations.

3. CAP photography training places emphasis upon the manipulation of the various types of cameras, and the developing and printing of the film. This emphasis is intended to acquaint the largest number of members with the correlation of photography with other CAP activities and to create a safeguard for photographic equipment and materials when, during an emergency, it is necessary to rely upon non-professional personnel to assist with photographic missions.

BASIC COURSE IN PHOTOGRAPHY

Orientation.--The first meeting of the class at which the instructor gives the students a



Figure 7-22.--There's varied and practical experience in a CAP photography course.

comprehensive view of the subject they are to study by telling of the many applications of photography. An exhibit of prints of a pictorial character would add materially to the effect of this session.

Basic Darkroom Procedure.--1. Printing--The student is introduced to the essentials of the photographic process by a demonstration and darkroom work in printing. The negatives may be supplied either by the student or the instructor. This starts the student in the darkroom under the most favorable circumstances.

2. Film Processing--A still life is set up in the studio, a view camera focused on it, and the correct exposure determined. Students load holders (after demonstration by instructor), expose as directed, and develop, using time-temperature data. The objective is to produce a negative free from mechanical defects such as finger marks, abrasions, and dust, and matching in printing quality the pilot negative made by the instructor. During the latter part of the period, while negatives are washing, the instructor demonstrates the effect of exposure and development on negative quality.

3. Preparing Solutions--Method of compounding solutions demonstrated, effect of incorrect compounding, contamination, and decomposition discussed. Remainder of period consumed in printing assorted negatives.

Basic Camera Technic.--1. Cameras and Lenses--A discussion of the various kinds of cameras. Emphasis is placed on their essential similarity. The concept of lens aperture and its relationship to shutter speed and exposure is developed. In the studio the students carry out experiments to show the

equivalent exposure times for various apertures. An object with considerable depth is used so that the resulting negatives can be used at the following session to study depth of field.

2. *Picture Sharpness*--Discussion of the effect of focus, depth of field, shutter speed, camera steadiness, and direction of motion relative to camera axis on picture sharpness. Students cooperate to make a comprehensive exhibit of this subject.

3. *Light and Exposure*--Discussion and practice in determining exposure by the use of tables, calculators, and exposure meters.

Enlarging. --Demonstration of enlarging procedure coupled with composition as related to cropping and local exposure control.

Photographic Materials. --1. *Kinds of Film and Their Uses*--In the studio, experiments are carried out to show the differences in orthochromatic and panchromatic films when used to photograph people and colored objects.

2. *Filters*--A discussion of filters as an extension of the previous experiments. Meaning of the filter factors explained. Students continue film experiments using filters to control color contrast and to record clouds in their pictures.

3. *Photographic Papers*--Discussion and demonstration of the various kinds of paper (speed, image, color, paper weight, surface and texture). In the studio the students complete their experiments on films and filters.

Making Pictures That People Like. --A discussion of the elements of a good picture and some of the things to do in making a good landscape or architectural studies or vacation pictures.

The students are assigned to make an exhibit picture in one of the classifications mentioned.

Lighting. --1. *Principles of Lighting*--Discussion and demonstration of rendition of shape and texture by proper light placement. In the studio the students apply the principles by photographing geometric figures.

2. *Informal Portraiture*--Demonstration of elements of portrait lighting. General illumination, modeling light, background illumination, and backlight. Posing is taken up when the students apply the principles shown in the demonstration by making informal portraits of each other.

Exhibit Prints and Albums. --Demonstration of retouching, mounting and spotting. Discussion of standards for exhibit prints and album ideas. Students begin work on class exhibit.

Class Exhibit. --Discussion of the technic of print criticism.

Vocational Orientation. --A discussion of the possibilities of a career in photography. At this point in the course it is well to give the student a clear picture of the outlets for his photographic training.

Pictures That Speak--1. The possibilities of the camera as a reporter.

Develop projects along this line to be taken on by the student for execution outside of class period. Topics associated with courses being studied lead to the production of pictures that are useful and provide a valuable incentive.

2. *Slides and Transparencies*--A demonstration of the technic of slide and transparency production. The students undertake the production of slides that may be useful in the school classroom. Or, for example, the class can produce a feature for assembly dealing with something of general interest.

The Miniature Camera. --1. Demonstration of optical advantages.

2. *Fine Grain Processing*--The procedure is described and the students expose and process a roll of "miniature" film. They then make enlargements from the negatives selected by the instructor.

Action Photography. --1. A discussion of sports photography and general methods of press photography. Flash lamps and synchronizers. A description of the Kodatron Speed-lamp and its uses.

Students are assigned to cover local events and produce pictures useful for school publications or bulletin board display. Class field trips make good assignments.

Viewpoint and Perspective. --A practical discussion of the relation between viewpoint and focal length and the appearance of the picture. Introduce the wide-angle lens for architectural work, long focal length lenses for portraiture and sports, and telephoto lenses for sports and natural history.

Color Photography. --1. The principles of color photography--A discussion of how color photographic materials reproduce color. This can be made especially effective by using a wash-off-relief transparency to demonstrate the principle.

2. *Lighting for color*--A demonstration of the importance of having light of the right color quality and having proper light contrast. Use of reflectors, out of doors, is demonstrated. Effect of colored surroundings is emphasized.

If funds are available, each student should make color photographs with a miniature camera. As an alternative the class can expose a roll of color film as a cooperative venture.

3. How color photographs appear in print --A visit to a local photoengraving plant to see how color photographs are reproduced.

Pictures for Publication. --A demonstration of how to prepare photographs for reproduction--mounting, cropping, and photographic quality. Show original prints and cuts made with various screens. This topic should be timed to fit in with any work the students may undertake for school publications.

Pictures of Little Things. --1. Close-ups with long bellows and short focal lengths. A demonstration of special problems of depth and resolution of detail.

2. Demonstration of photomicrography. Students so inclined can elect projects in these fields.

Copying and Microfilming. --1. Demonstration of technic of making copies of line and continuous-tone subject. Each student makes a copy of each kind.

2. Discussion of microfilming. Show operation of Recordak and show microfilm copies of newspapers and articles.

Motion Pictures. --1. How the motion picture camera and projector operate--a demonstration.

2. How a movie is made--Preparation of story and scenario; shooting the picture; editing. In most schools this may have to be an academic treatment. If possible, however, the class should produce a short motion picture, preferably of an educational variety. A motion picture of a simple experiment in physics or chemistry can be shot in one period and edited the following period.

The Class Exhibit. --This exhibit can well be correlated with the exhibits of the art department. All through the year the students should prepare their assignments so that they can be exhibited. The instructor should keep this objective before the class.

How Pictures Are Made

Photography is an accurate means of recording information of terrain, individuals, objects, and events. It is also a means of communication. It is a medium of vital importance to the commander in obtaining information of a strategical, tactical, or technical nature.

The camera in its most elementary form is simply a closed box, completely light-tight except for a very small hole in the center of one end. When such a box is properly placed before some subject, as illustrated in the sketch, light reflected from that subject will pass through the tiny hole and form

an image--"upside-down" and reversed right to left--on the other end of the box. If a light-sensitive film has been placed inside the box at that end, the light will act upon the film, causing a chemical change in its emulsion and forming a photographic image.

The Elements of a Practical Camera.

Unfortunately, this simplest of all cameras is not very practical. Because the pinhole opening is so small, it is a long time before enough light passes through it to record the image on the sensitive film. By enlarging the hole you can admit more light, but you immediately lose control of it. The image becomes blurred and useless. That is why any camera you may buy has a lens. Your lens admits much more light than a pinhole thereby helping to form an image on the film in a relatively short interval; yet it is so constructed that it controls the light rays focusing them accurately on the film to give you an image that is clear and sharp.

To make cameras even more practical, the primitive pinhole type has been basically modified in several other ways. Because a lens admits much light in a short time, a device to control that period of time is needed; hence, your camera has a shutter which you open and close at will or which operates automatically at a definite speed or interval. This interval is usually a fraction of a second, though most shutters have adjustment by which they may, if conditions so require, be kept open for exposures of several seconds or even for minutes.

Most modern cameras also enable you to vary the volume of light that passes through to the film while the shutter is open. The device used is the diaphragm, which admits light through one of several optional openings. In its simplest form the diaphragm is a plate or slide with perforations of different sizes. It may, however, be in the form of an ingenious iris, which provides an opening of adjustable size, the extent of which is indicated by a system of numbers.

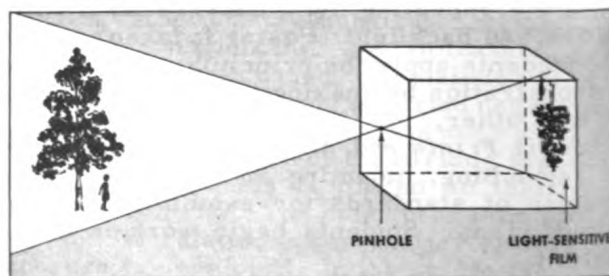


Figure 7-23.--The Pin-hole Camera.

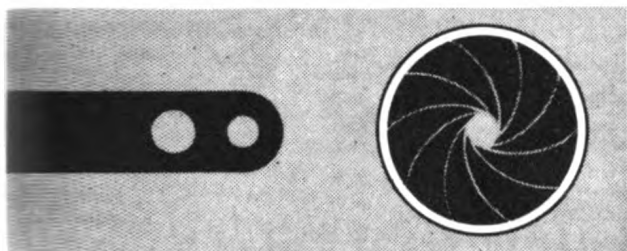


Figure 7-24.--A simple slide plate diaphragm (left) and an adjustable iris diaphragm (right).

The Camera is Like the Eye

The specific uses of the diaphragm will be given later. In the meantime the term iris suggests the remarkable similarity of the camera and the human eye, demonstrated in the accompanying diagram. Every camera element thus far mentioned has its counterpart in the eye. One additional part alone has no parallel in your organs of sight. Your brain tells you instantly what your eyes are seeing, but unless your camera is of such a type that you regularly look through it from the back, you cannot, unaided, tell what the camera is seeing. Consequently, most cameras have a special device --the finder--which shows what the picture includes. If the view is not what you wish, you change the position of the camera, just as you change your own position, or turn your head, to get the visual image you want.

On many cameras the original light-tight box is replaced by a flexible bellows, which permits folding the camera and gives greater compactness. Also, all cameras have means not only for holding the film but for replacing it conveniently. Many other modifications, additions, and refinements are likewise used. While not basic, these devices greatly increase the utility and convenience of modern cameras.

Forming the Photographic Image

The film which is placed at the back of the camera is coated on one side with a light-sensitive substance known as the emulsion. When you flash an image on this sensitive coating by admitting light through the lens, a chemical change takes place. The change would not be noticeable to the eye if you were to examine the exposed film, nevertheless, an invisible image has been formed. This invisible picture, or latent image as it is called, is made visible by a further chemical change, brought about by placing the film in a solution known as the developer.

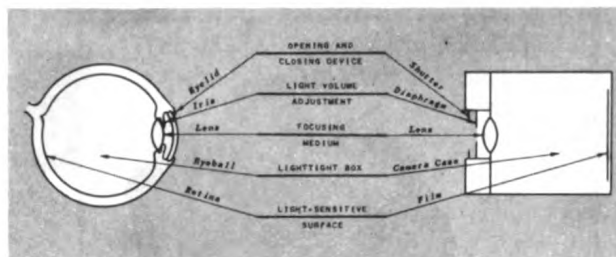


Figure 7-25.--The elements of the eye are duplicated in your camera.

After the image has been made visible, the film is placed in another solution called the fixing bath. The use of this solution prevents the image from fading out--makes it permanent.

The Negative and the Print

When your film has been developed and fixed, it is called a negative, because the dark objects in it appear light and the light objects dark. You get the final picture by another process called printing. A sensitized photographic paper is placed in contact with the negative and exposed to a light for a certain period of time. The paper then goes through solutions which act like those which were used to obtain the negative. The result is a positive image--a print, or picture.

Types of Cameras

Camera designs are numerous. Simple models such as the box cameras, though modest in price, are thoroughly dependable picture makers in their intended sphere. Such cameras make sharp, clear pictures of average outdoor subjects in good light, and modern black-and-white films and photo lamps have extended their scope to indoor situations. Folding cameras offer greater compactness and carrying ease; the more



Figure 7-26.

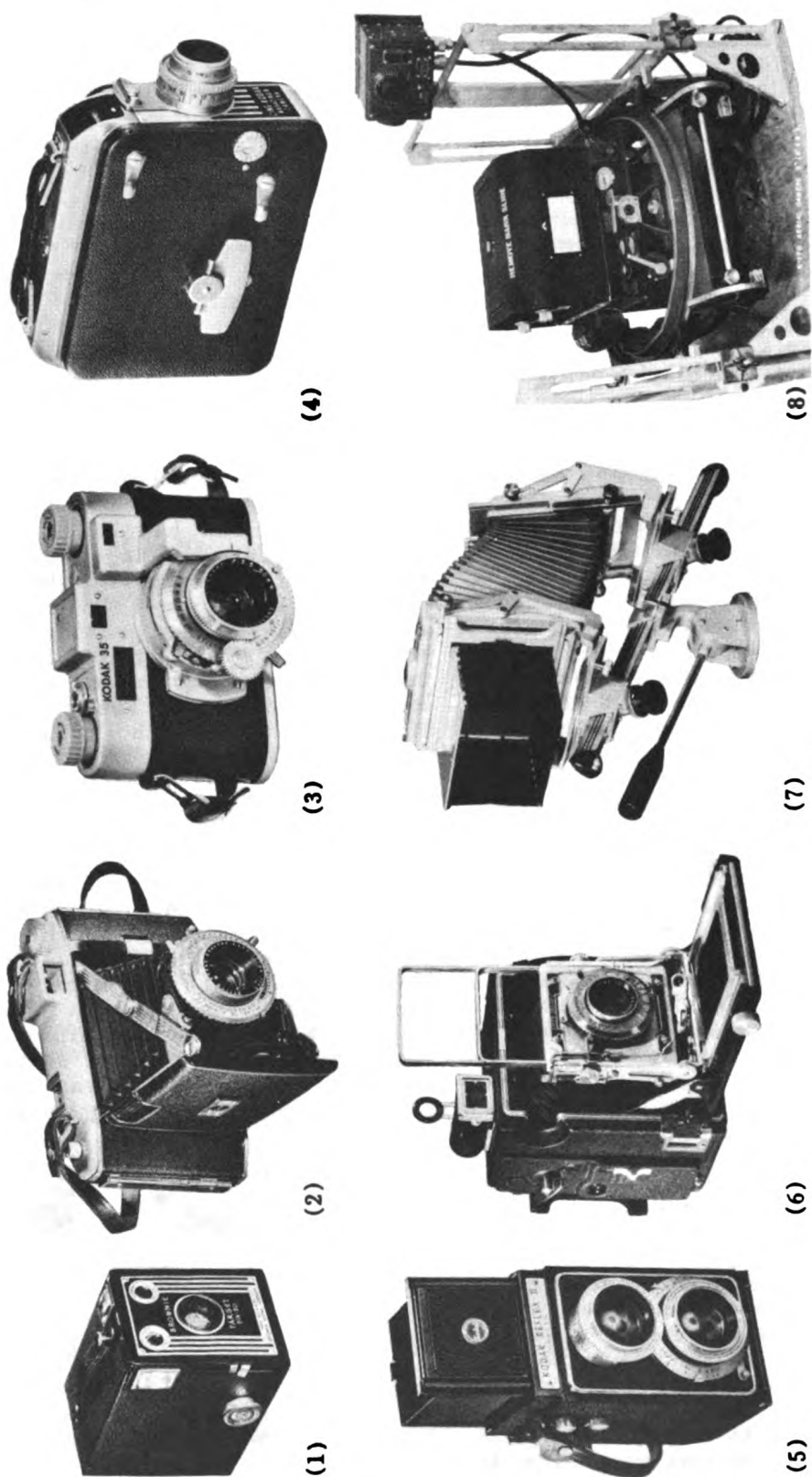


Figure 7-27.--Camera Types: (1) Box, (2) folding, (3) precision miniature, (4) motion picture, (5) reflex, (6) high-speed press type, (7) portrait, and (8) aerial.

pretentious ones successfully cope with rapidly moving subjects, and indoor subjects under adverse lighting conditions.

Miniature cameras are exceptionally convenient, and most of them are designed to make pictures under a great variety of conditions. Since they load with small, relatively inexpensive films, they give you greater freedom and greater economy.

Reflex cameras are becoming tremendously popular. These modern cameras utilize a special twin-lens principle, whereby the large, clear view-finder image permits great accuracy in framing a subject, and details easily are observed before the picture is taken.

Lens and Shutter Determine Camera Scope

In choosing a camera, remember that its ability depends almost entirely upon two elements--the lens and the shutter.

In general, the bigger a lens is in relation to its focal length (the distance from lens to film), the more light it will admit in a given interval, and the greater the scope which it will give your camera. The "speed" of a lens is generally determined by comparing its diameter to its focal length, and is expressed by a symbol. An $f/8$ lens is one whose diameter is one-eighth its focal length. An $f/3.5$ lens is $1/3.5$ (or about $1/3$) its focal length, and an $f/2$ is one-half its focal length. The point to note is that the smaller the "f/number" or "f/value," the faster the lens. (In actual practice, the f /value of a lens is determined, not by the relation between the focal length and the full diameter of the lens, but by the relation between the focal length and the diameter of the largest diaphragm opening, or aperture, at which the lens can be used effectively.)

The larger or faster the lens planned for a camera, the more difficult it becomes to

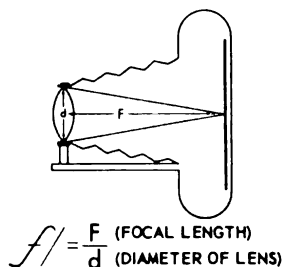


Figure 7-28.--Don't let the f / number disturb you. It's merely a convenient way to indicate the working diameter of the lens.

TYPE OF LENS	ELEMENTS OF LENS	RELATIVE SPEED
Meniscus		1
Doublet		$1\frac{1}{2}$
Anastigmat $f/8.8$		3
Anastigmat $f/6.3$		6
Anastigmat $f/4.5$		11
Anastigmat Special $f/3.5$		18

Figure 7-29.--A key to lens ability.

control the light. The large lens tends to give you the same effect as the enlarged pin-hole--an unclear image--because, as the size of the lens is increased, faults may readily creep in. To avoid or correct these faults means painstaking calculation and manufacture, and the use of several glass elements in the lens, perhaps with surfaces of different curvatures, assembled with care in a precise mount.

The Best Type of Lens

Unquestionably the finest type of lens is the anastigmatic type--"without astigmatism." Photographically this means that a picture made with such a lens will show details clearly and sharply not only in its central part but over its entire area, from edge to edge. Negatives with over-all sharp images yield clear-cut prints, and big enlargement with fine definition throughout.

Lenses of this type, which include both the Kodak Anastigmats and Kodak Ektars, also have other highly desirable qualities, among them substantial speed. An $f/6.3$ anastigmat is about six times as fast as the "single" lens used on many box-type cameras. An $f/4.5$ anastigmat is twice as fast as an $f/6.3$, and $f/3.5$ one and two thirds times as fast as an $f/4.5$, and an $f/2$ three times as fast as an $f/3.5$. (The relative speeds of any two lenses vary inversely as the squares of their f /numbers. Therefore if you want, for instance, to compare the speeds of an $f/8$ lens and an $f/2$ lens, you can do it easily as follows:

$$\frac{8^2}{2^2} = \frac{64}{4} = 16$$

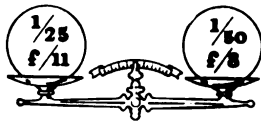


Figure 7-30.--A slow shutter speed with small lens aperture will give the film the same exposure as a fast shutter speed and a wide open diaphragm.

The larger number, 16, is the result of squaring the $f/$ value of the $f/8$ lens, but since the relation is an inverse one, the $f/2$ lens is sixteen times as fast as the $f/8$, when both are used at their largest effective apertures.

The ratios do not always "come out even"; nevertheless, you can usually arrive at an approximate comparison without much trouble. For $f/6.3$ and $f/4.5$ lenses it works out as follows:

$$\frac{6.3^2}{4.5^2} = \frac{\text{approximately } 40}{\text{approximately } 20} = \frac{2}{1}$$

Therefore an $f/4.5$ lens is about twice as fast as an $f/6.3$.

A lens of the anastigmatic type is decidedly worth considering. Such a lens means good pictures under a variety of conditions, enabling you to make pictures earlier and later than would otherwise be possible. Like a high-powered car, a good anastigmat lens always has the speed when you need it. In short, such a lens brings you an assurance of generally excellent pictures, plus the ability to cope with unusual situations.

Typical Lens-and-Shutter Combinations

For general use, even for pictures of moderately fast-moving subjects, an $f/6.3$ lens and a shutter with speeds up to $1/100$ th are an adequate combination. If your photography is likely to include athletic events, other subjects involving very fast action, or varied indoor shots, an $f/4.5$ lens and a shutter with speeds up to $1/200$ th or $1/400$ th second would be a better choice.

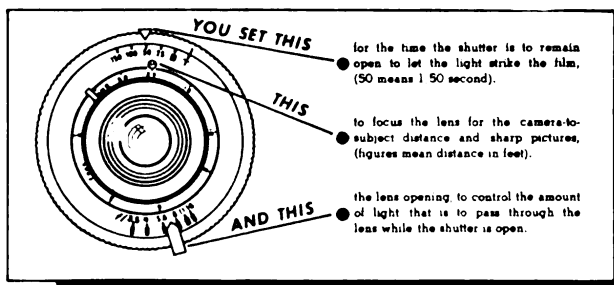


Figure 7-31.

Coated Lenses

Many of the new fine cameras are equipped with coated lenses. These lenses have a microscopically-thin layer of hard crystal-clear metallic fluoride deposited on each glass-air surface. Such treatment reduces the reflectivity of the glass, thus minimizing the risk of lens flare or "ghost images" in pictures taken against the light. In addition, all pictures taken with such a lens have a cleaner contrast, more crispness and "sparkle"; and full-color shots show a higher degree of color purity.

Flash Shutters for Synchronized Photoflash

Shutters in many cases now have a built-in mechanism for synchronized Photoflash exposures.

This mechanism, completely enclosed in and protected by the shutter housing, provides an electric contact and timing means accurately designed for use with the most popular types of Photoflash lamps. When the shutter opens, the electric circuit closes, automatically discharging the Photoflash lamp at exactly the right moment.

So equipped, you can take Photoflash shots of subjects in motion, indoor sports shots, a wide range of new and fascinating subject-matter, quite inaccessible without synchronized Photoflash. For flash shots, the flashholder is easily attached to the synchronizer contact on the shutter. For shots without Photoflash, of course, the flashholder is readily disconnected and removed from the camera.

Selection of Film

The type of film to use will depend on the kinds of subjects you intend to photograph, the kind of camera you will use, the light conditions under which you will work and, in some instances, the particular effect you may desire. This may seem like a complicated matter, but you will find after a little practice that it is really quite simple.

The various types of film described here afford an ample choice for everyday picture making, and strikingly illustrate the extent to which photography has advanced. In making a selection, three factors you will want to consider are speed, latitude, and color sensitivity, and two of these can be defined in one sentence each. The speed of a film refers to the amount of exposure it requires in order to form a satisfactory image; a fast film naturally requires relatively little exposure. Latitude refers to the degree of

variation in exposure which a film will permit without serious detriment to the quality of your negatives. This means, for example, that a film with good latitude will give you a satisfactory picture even if you make a slight error in judging the quality of the existing light and the amount of exposure necessary.

Color sensitivity as used here refers to the response of a black-and-white film to light of various colors. Some films respond almost exclusively to blue light, and are known as non-color-sensitive. Suppose that you were using such a film to photograph a combination of light yellow and dark blue flowers, with green foliage. The film would respond to the light reflected from the blue flowers, but not to yellow or green; therefore, both the yellow and the green would appear darker in your picture than the blue, though to the eye they appear lighter. Practically no such film is now used by amateurs; its usefulness is primarily in specialized photography.

Today's average "snapshot" photographer uses a fully orthochromatic film. Such a film is sensitive to green as well as to blue light, and in the picture situation mentioned above it will correct to a considerable degree the faulty rendition given by the color-blind film.

Panchromatic film carries this correction one step farther. It records all colors in their proper tone relationships, giving them, in black-and-white, the same relative brightness which the eye assigns to them. The most striking improvement is in the relatively bright rendition of reds, which other types of film record quite dark. With panchromatic film, black-and-white rendition of colors may be selectively varied by using proper color filters, as described in a later chapter.

Other films, especially designed for certain types of scientific and professional work, are manufactured by the Eastman Kodak Company. But the popular films described in the following pages are fully capable of meeting everyday picture-making opportunities.

Kodak Verichrome Film. --For day-in and day-out picture making, there is nothing better than Kodak Verichrome Film. It has a very long tonal scale--in other words, wide latitude of exposure so that if, on occasion, you make small errors in the way of over-exposure or under-exposure, you will still get good pictures.

Verichrome is also highly orthochromatic, and gives excellent tone values to the bright yellows, the browns, and the greens.

A further advantage of Verichrome results from a dye on the back of the film. This

colored backing to a considerable degree controls halation--the spreading of light from a bright object--making possible clearer pictures of subjects in brilliant sunlight, and of night illuminations.

Kodak Super-XX Film. --Super-XX offers you the advantages of great speed and complete color sensitivity, plus anti-halation backing. Outdoors in sunlight, Super-XX has several times the speed of regular film. It is of particular advantage where high shutter speeds are required, as in photographing sports events, and will often "save the day" when fast exposures must be made in cloudy weather.

The extreme speed of Super-XX Film makes possible snapshots indoors by artificial light with any camera.

Kodak Plus-X Film. --Kodak Plus-X is fully panchromatic and, used with color filters, gives excellent black-and-white rendering of color values. Because of its unique combination of high speed, fine grain, and complete color sensitivity, and because of the generally excellent photographic quality which it imparts to pictures, it is known as "the all-round panchromatic film." It also has an effective anti-halation backing. Plus-X Film is the panchromatic film to use unless light conditions are very adverse, or unless a very high degree of enlargement is intended.

Kodak Panatomic-X Film. --The most distinctive quality of this modern black-and-white film is grain of exceptional fineness. This means that even when a Panatomic-X picture is enlarged to many times its original size, the graininess is so negligible that remarkable detail and brilliance are retained.

While not in the high-speed class, Panatomic-X is amply fast enough for ordinary purposes. It is also completely color-sensitive--panchromatic--and has an anti-halation backing.

Kodacolor Film. --This wonderful film achieves the result which photographic scientists sought for many years--full-color snapshots, printed on paper like any other photographs.

Kodacolor Film is a roll film. Any roll-film camera that produces satisfactory black-and-white pictures can be used for Kodacolor pictures, regardless of its lens and shutter equipment.

Kodachrome Film. --Kodachrome Film has become famous as the film which ushered in the age of color photography. Unlike Kodacolor and most black-and-white films, Kodachrome does not involve a negative-positive process. The first results you see are

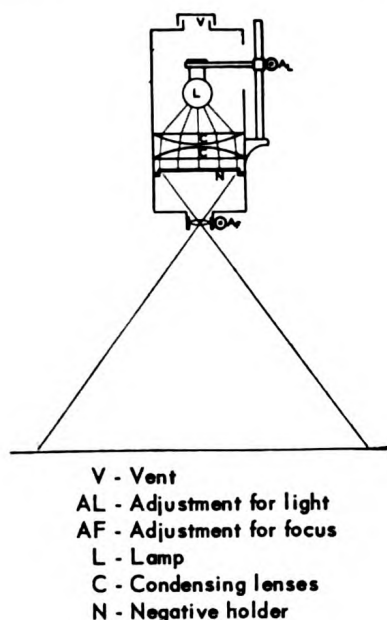


Figure 7-33.--Photographic enlarger.

projects its image on a screen. The enlarger's primary appeal lies in the fact that large prints are possible from various size negatives and that greater control of the final picture is possible by such techniques as cropping and dodging. The development of contact and enlarger prints is handled in the same manner by a four-step process: 1. a developer; 2. a stop bath; 3. a fixing bath; and 4. a clear-water wash.

AERIAL PHOTOGRAPHY

You should understand the importance of aerial photography because:

1. Maps and charts are frequently based on aerial photographs. Revising maps is greatly facilitated by this means.
2. Aerial photographs may be used as substitutes for maps and charts under certain conditions, such as in emergencies for locating the extent of floods, forest fires, etc.
3. Source of special intelligence, such as for locating nature and extent of woodlands, crops, and erosion damage, or dynamic situations such as plane wrecks, and traffic tie-ups due to wrecks, floods, tornadoes or snowfall.
4. Source of special intelligence resulting from third dimension analysis. Under this heading would come height and depth measurements made possible by overlapping photographs. That would be useful in determining

height of obstructions around possible landing fields, depth of bodies of water, roughness of terrain for special search mission, etc.

Types of Aerial Photos

In order to use aerial photos to best advantage, you must be familiar with the various types and know some of their advantages and disadvantages.

Oblique aerial photos are taken at an oblique angle to the ground. There are two kinds of obliques: 1. high oblique, which includes a portion of the horizon; and 2. low oblique, which does not include the horizon. Obliques are used by ground forces because they emphasize relief, thus giving valuable information about target construction, and they help familiarize aircrew members with the appearance of targets from the air. The chief disadvantage of obliques is their excessive distortion. Also, they make poor map substitutes, for the scale varies from foreground to background. Distance and direction are hard to determine. However, specially equipped photographic planes can cover as much as 7,000 to 8,000 miles per hour, and engineering map reproduction units can translate the photos into maps with surprising rapidity.

Vertical, aerial photos are taken as nearly perpendicular as possible to the surface of the earth.

There are also two kinds of verticals: 1. plain vertical which is made with a single-lens camera; and 2. composite vertical, which is made with a multiple-lens camera.

Verticals are the most useful of all types of aerial photos. They are used to prepare and revise maps and charts because they show comparatively little distortion in the relative sizes and shapes of objects. Verticals are used as substitutes for maps, and

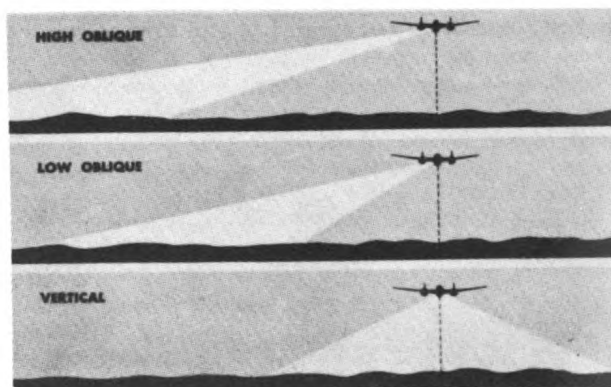


Figure 7-34.--Aerial Camera Angles.

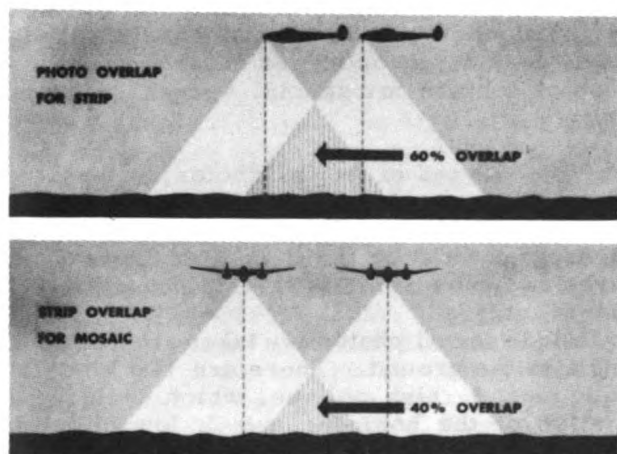


Figure 7-35.--Timing Exposure for Overlaps.

they constitute the basic unit for making mosaics and photo maps.

Mosaic Arrangements. The two basic types of aerial photos, obliques and verticals, may, for special purposes, be arranged in series to form larger photos covering larger areas. Usually it is the vertical type which forms the basis for these mosaic arrangements.

Reconnaissance strip is a series of overlapping vertical photos made from an airplane flying a selected course. Reconnaissance strips are also known as photographic strips, or simply strips. In making a strip, an automatic timing device called an intervalometer is attached to the camera, and is set for the desired altitude and ground speed. Overlapping photos are taken in sequence. Sixty percent of each picture is duplicated on preceding and succeeding exposures. The resulting prints may be laid out on a table and roughly overlapped for study. So mounted they are called a strip mosaic. Reconnaissance strips are used to secure information on a narrow strip of territory, such as a coast line, road or railroad, zone of action, or stabilized front line. They are also used in the production of mosaics and stereo-pairs.

Mosaic is a photograph made by joining portions of many vertical photos taken at different camera positions from the same altitude. The resulting patchwork provides a view of an area too large to be covered in a single vertical photo. To produce a mosaic, the photographic plane flies a series of parallel flights at a given altitude. The photos along one line of flight overlap sixty percent, as in a reconnaissance strip; adjacent flights sidelap forty percent. Mosaics are used in making photo maps and in preparing accurate maps and charts.

Photomap is a reproduction of a plain vertical, composite vertical, or, as is usually the case, a mosaic with the addition of grid lines, scale and place names. Photomaps are used extensively instead of maps by ground forces. Air forces use photomaps for analysis of targets and target areas.

Stereoscopic arrangements are pairs of aerial photos taken and arranged in such a way as to produce a third dimensional effect if viewed with proper equipment. Two such arrangements are in common use.

Stereo-pair: two overlapping vertical photos taken from the same altitude but from two slightly different camera positions. The overlap is usually sixty percent. Any two overlapping photos from a reconnaissance strip constitute a stereo-pair. By proper placement under a stereo-scope the third dimension is obtained. The third-dimensional view greatly aids in the study of ground detail, and is the basis of a special technique for calculating the height or depth of ground objects or features.

Vectograph: a three-dimensional picture in the form of a single print. In the area of a single image the vectograph presents the two images one over the other, necessary for a three-dimensional picture. A stereo-pair and a polarizing solution form the basic elements in making a vectograph. To view the vectograph, you wear a pair of three-dimensional polaroid spectacles. Vectographs



Figure 7-36.--Strip Mosaic. (Prints have been cut to illustrate overlap).

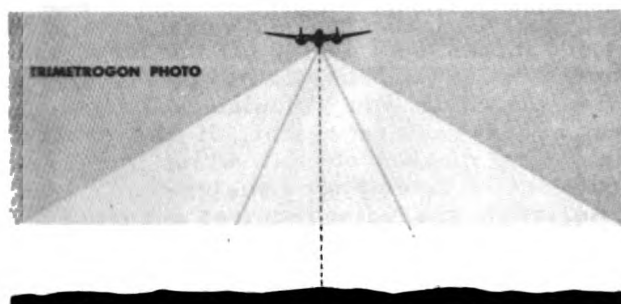


Figure 7-37.--Trimetrogon Photo.

were used in World War II for detection and in briefing combat teams. In the Southwest Pacific and in Alaska landing parties studied vectographs of beach heads before attacking.

Trimetrogon photos. The trimetrogon camera unit consists of three cameras mounted in an airplane in such a way that one camera points straight down to take its picture, another points to the left of the line of flight at a 60° angle from the vertical, and the third is pointed to the right at the same angle. Three photos are taken simultaneously, one vertical and two high obliques with a horizon-to-horizon coverage. Trimetrogon photos are used in the rapid manufacture of aeronautical charts. Because they are taken in overlapping strips, a wide coverage of terrain is possible. They are useful for rapid and wide reconnaissance coverage of difficult or inaccessible terrain.

Fundamentals of Aerial Photo Study

Marginal Notation.--Marginal notation is the printed legend that appears along one edge of an aerial photo. This gives important information about the photo, including:

1. Organization or unit that made the photo.
2. Information used for filing purposes, as the type of photo, mission, roll and negative numbers, etc.
3. Year, month, day, and hour the photo was taken.
4. Focal length (distance from lens to film) of the camera.
5. Altitude from which photo was taken.

The best approach to marginal notation is to know the meaning of important symbols, as their arrangement is sometimes varied.

Compass Orientation of Vertical Photos.--In using aerial photos, just as in using maps and charts, you must know which way is north. Maps and charts are usually oriented with north at the top, but this is not always the case with aerial photos. There are three ways of orienting vertical aerial photos:

1. By directional arrow, indicating magnetic north on the aerial photo.
2. By comparison with a map of the same area.
3. By noting the time of day, and then observing the direction of shadows, you can tell approximately which direction is north. This method should be used as a last resort, for it is not too satisfactory.

Scale in Vertical Aerial Photos.--For certain purposes, knowing the scale of a vertical aerial photo is just as important as knowing the scale of a map. As you might suppose after studying a map scale, the scale of a vertical photo is the ratio between any distance on the ground and the image of that distance in the photo. Scale in vertical aerial photos is usually expressed by a representative fraction (RF), such as 1:5,000, 1:8,000, etc.

There are various ways of determining scale in vertical aerial photos.

1. Calculation from focal length of camera and height of camera above the ground. This is the most satisfactory method, and one that is used when the photo bears marginal notation. The two factors for determining scale are focal length of the camera and its height above the terrain. These factors are expressed in the accompanying diagram. The upper triangle represents the camera cone, and the lower triangle the cone of ground coverage. Since the sides and altitudes of the triangles are proportional, the scale of the photo is the ratio between the altitude of the small triangle (the focal length) and the altitude of the large triangle (distance from lens to

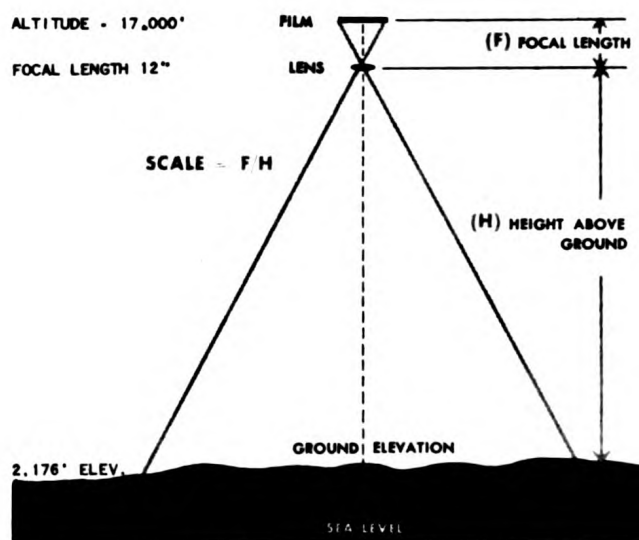


Figure 7-38.--Formula for Determining Scale

ground) or the ratio between the base of the small triangle (film) and the base of the large triangle (ground). A formula for scale may thus be expressed as $\frac{F}{H}$. In using this formula,

care must be taken that both focal length and camera height are expressed in the same units of measurement, either inches or feet.

Suppose we calculate the scale in the photo. The focal length is 12 inches and the altitude above mean sea level is 17,000 feet. To get the height (h) of the camera above ground, we must find the elevation of the area being photographed. The map shows this to be 2,176 feet. By subtracting 2,176 from 17,000, we get 14,824, which is the height of the camera above the ground. We can now place our figures in the formula $\frac{F}{H}$ giving $\frac{12 \text{ inches}}{14,824 \text{ feet}}$.

Remember that the figure 12 is inches, the figure 14,824 is feet. They must be expressed in the same units. Since 12 inches equal 1 foot, our scale is $\frac{1}{14,824}$ or 1:14,824.

Or consider this problem. The focal length is 6 inches, the altitude above mean sea level is 20,000 feet. Suppose the ground elevation is 4,000 feet. This gives a camera height of 16,000 feet. We now have the formula $\frac{6 \text{ inches}}{16,000 \text{ feet}}$. Multiply 16,000 by 12 to give inches in both numerator and denominator, giving $\frac{6}{192,000}$ or $\frac{1}{32,000}$ or 1:32,000.

To convert this RF into an inch-per-foot scale, divide 32,000 by 12, thereby getting 1 inch = 2,666 feet.

2. Comparison of photo with large scale map of same area. If there is no marginal notation, you can determine the scale by comparing the distance between two objects on both photo and a large scale map of the same area. "Thus, if the pair of objects in the photograph were found to be 4 inches apart, and the same pair on a one-inch-to-a-mile map were only 1 inch apart, the scale of the photograph would be 4 miles to an inch or 1:16,840 $(=1:5,280 \times 12)$."

3. Inspection of photo for some object or area of known size. If other means are lacking, you can develop an approximate scale by finding some object or area in the photo of known size. For example, the city blocks are quite prominent populated areas. Measurement with a ruler gives a length of $\frac{1}{4}$ inch for one side of the square blocks. Since most square city blocks in western towns average about 300 feet to a side, you can show that in this photo $\frac{1}{4}$ inch = 300 feet,

or 1 inch = 1,200 feet. To reduce to the same units, multiply 1,200 by 12 to give 14,400 inches, or 1:14,400 for the RF. This compares favorably with the figure of 1:14,824 which you calculated from focal length and camera height. If the football field were marked off with white lines, you could easily develop your scale from it.

Aerial photo reading requires accurate and rapid identification of the objects shown in the photo. Map reading is made easy because only certain selected features of the earth's surface are shown, and these features are represented by symbols that are well known, or are explained in a legend of the map.

Aerial photo reading is not so simple. The camera does not select--it records everything visible in the landscape. As a beginner you may be confused by this complexity. You may not be able to see the trees for the forest. You will soon overcome this. After you have studied a few aerial photos you will see order instead of confusion.

Two other characteristics of aerial photos may give you trouble until you become accustomed to them. One is the absence of color, and the other is the apparent lack of relief. The landscape and the objects on it--hills, valleys, trees, etc.--are flattened out by two-dimensional photography.

The small size of the images in high-altitude photos also troubles most beginners. An even greater difficulty arises from the fact that many features--roads and railroads, for example--appear very much alike.

In spite of these difficulties, it is surprising how easily you can identify most objects. Objects have certain characteristics which, if studied carefully, aid in their identification.

The shape of an object is one of its most characteristic features. Since you may see an object in either an oblique or vertical aerial photo, its shape will depend upon the point of view. You are already accustomed to viewing things from the oblique or profile view, as you see them from a mountain or a tall building. But unless you have already done some flying, you probably have had little

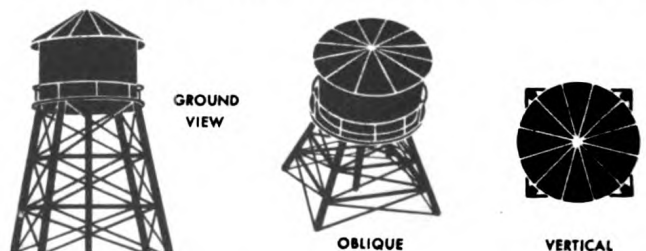


Figure 7-39.--Ground, oblique and vertical views of a water tower.

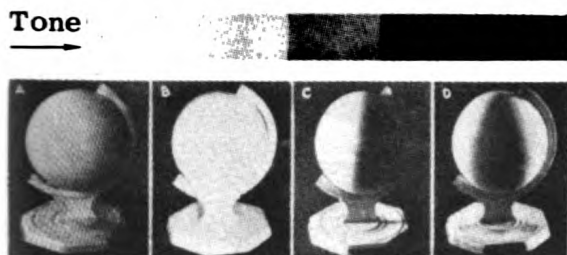


Figure 7-40.--The apparent shape of a spherical surface can be changed by lighting. A, balanced; B, flat; C, one-sided, and D, from opposite sides.

experience with the vertical view. To develop skill in identifying objects in verticals, you must learn to recognize objects by the ground plan or vertical outline.

Relative Size.--The size of an object is another characteristic which aids identification. In the same photo two objects may have the same general shape but have different size. This difference in size sometimes offers an important clue to identification. For example, the same photo may include a battleship, a heavy cruiser, and two destroyers. The differences in size would greatly aid in identifying the type of ships, particularly if the photo was taken from a high altitude. The same would apply to different types of airplanes shown in a photo of an airfield.

Tone.--The tone of an object also helps you identify it. "Tone" is the varying shades of gray you see in a black-and-white photo. It is tone contrast that enables you to distinguish the shape of objects.

Tone is governed by the fact that some objects reflect more light than others. Here are some of the most important factors which govern light reflection:

1. The angle of reflection. If a surface, such as one slope of a gabled roof, is set at such an angle that the camera catches a direct reflection of sunlight, then that slope will photograph lighter than the other side of the roof.

2. Color of the reflecting surface. Some colors reflect more light than others. Green, for example, photographs dark because it absorbs much light and reflects comparatively little. A patch of woods photographs darker than a plowed field.

3. Texture of the reflecting surface. Texture is the smoothness or roughness of a surface and its tendency to cast shadows. A smooth surface reflects more light than a rough surface. The smooth surface reflects more light directly and also scatters light finely in all directions. A rough surface reflects less light directly and also fails to scatter light effectively.

Tone is therefore a very important aid to identification. It helps distinguish an object from its surroundings. Knowing how tone is produced helps to avoid being confused by tone variations in the same object. It also helps interpret the terrain and detect changes brought about by military activity.

Shadow.--Shadows stand out clearly because they reflect little or no light and will be more noticeable in vertical than in oblique photos.

If you make a careful study of the shadows in vertical photos, you find many useful clues to aid identification. In terrain studies, for instance, the shadows help to give the illusion of depth and often call attention to small surface irregularities which might otherwise pass unnoticed.

Shadows are particularly helpful in identifying man-made features. The shadows are sometimes much larger in size and more distinctive in tone than the objects themselves.

Tall slender objects are best recognized by their shadows. This applies to smokestacks, water towers, tanks, church spires, and oil derricks.

Location and Surroundings.--Sometimes you may see objects in a photo that you cannot identify by shape, relative size, tone, or

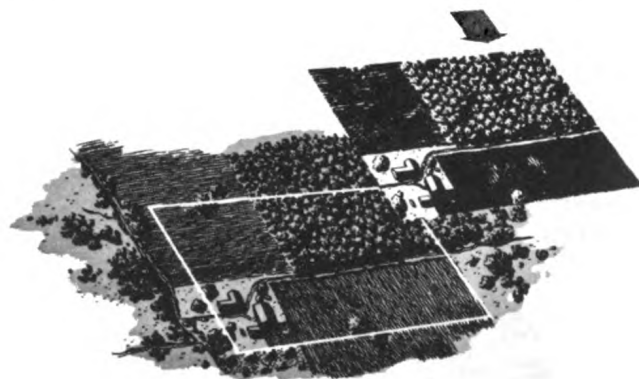


Figure 7-41.--Color of Reflecting Surfaces.

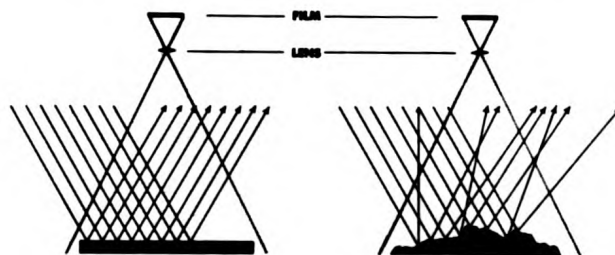


Figure 7-42.--Texture of Surface. Left, smooth; right, rough.

shadow. In such cases, make a close study of the location and surrounding objects. A building at one side of a field probably is a hangar if a plane is parked nearby. Or a railroad may be distinguished from a nearby highway by the presence of a siding. You must always use your head in reading aerial photos. A little Sherlock Holmes deduction often does wonders.

Now that you are familiar with the techniques for identifying objects in aerial photos, the next step is to apply these techniques. In view of your future duties in the air, the best thing to begin with is a study of topography or terrain. If you learn how to interpret the terrain in aerial photos, you will find navigation by pilotage much easier. To fly by chart you must become terrain conscious; you must learn to recognize the pattern of the terrain.

Relief. --Relief is one of the most important elements in topography. Oblique photos plainly show relief, and vertical photos of rough terrain show relief by shadows. But in verticals of flat terrain it is not so easy to distinguish differences in elevation. In this case you must deduce the nature of relief from observations of certain terrain features. What are some of these features which indicate relief?

The drainage pattern is the most valuable source of information on relief, and closely connected with it is the ridge system. Drainage lines vary in size, but in nearly all cases they are at a lower elevation than the ground on either side. It is important to realize that when two drainage lines join, their junction usually points downstream, indicating the general direction of slope.



Figure 7-43.--The Drainage Pattern.



Figure 7-44.--Cultivated Fields.



Figure 7-45.--Bodies of Water.

Islands and sand bars also indicate direction of stream flow and show slope. Their shape is usually that of a tear-drop, the pointed end heading downstream.

Cultivation indicates that the ground has only slight slope. The direction of furrows and contour terraces helps indicate relief, for they normally run at right angles to the slope.

The location and appearance of shadows will also indicate relief. For example, cuts and fills along a railroad may be identified by shadows. A shadow to the sun's side of the railroad indicates a cut; a shadow on the side of the road away from the sun indicates a fill.

Water Forms. --Bodies of water usually contrast in tone with the nearby land. Smooth, still water normally photographs dark, because light rays are not at the exact angle to be reflected into the camera. Choppy water, however, appears light, for there is always some point on every wave which reflects light back into the camera. Mud or silt in water also tends to reflect light, making the water light gray or almost white.

1. Shore lines of large bodies of water show the details of inlets, capes, bays, etc. Surf will show as a white edging.

2. Ponds and lakes offer sufficient contrast in tone to be identified promptly. If artificial, the straight or evenly curved line of a dam may be seen.

3. Swamps and marshes have a typical blurred appearance. They appear darker than surrounding land. A network of drainage lines is often present.

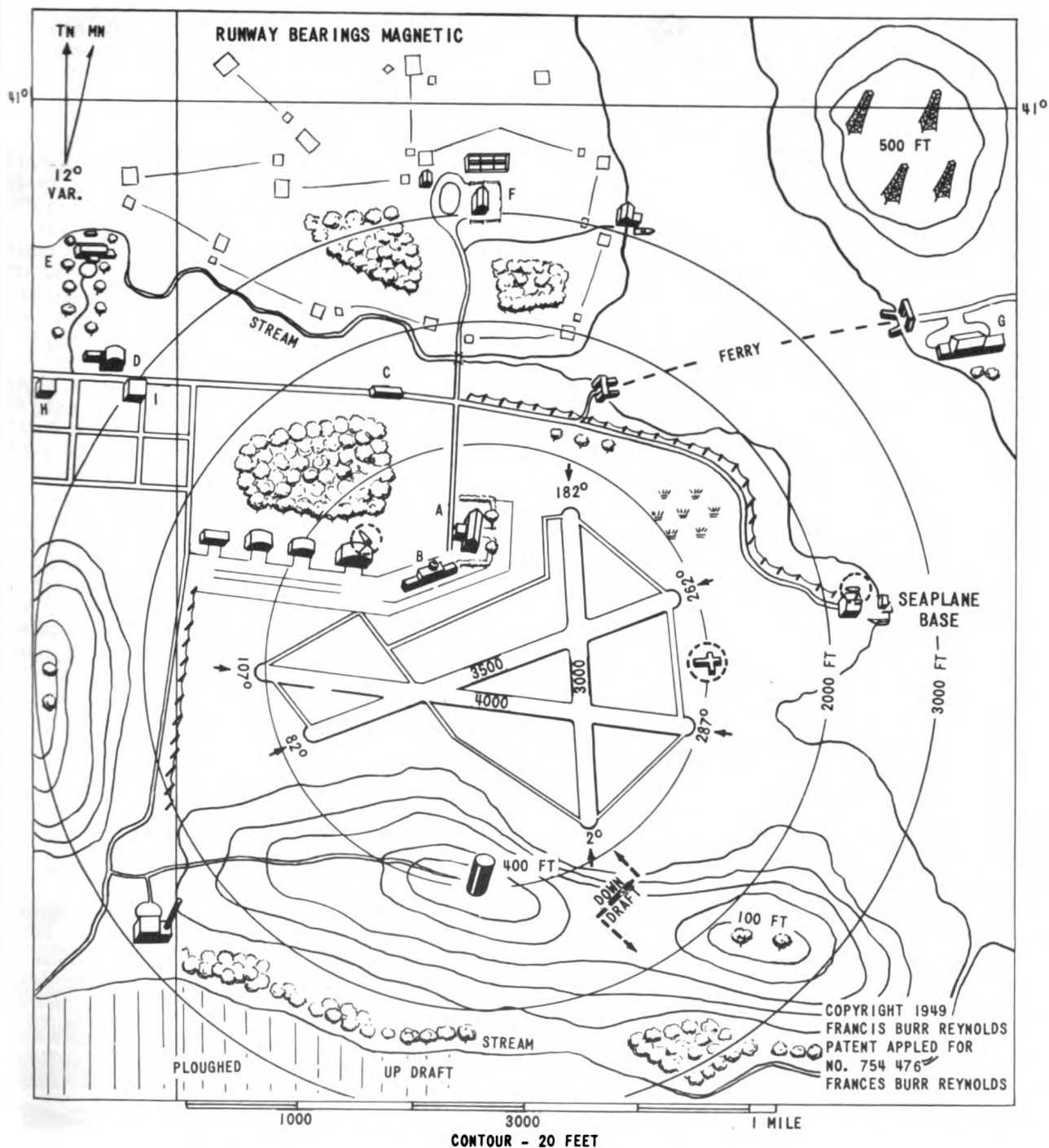
4. You can easily identify rivers by their meandering courses, irregular width, and contrasting tone.

5. Smaller streams are more difficult to trace on aerial photos. You can follow streams in heavily wooded areas by the lines where vegetation thins out. In normal woods, however, the stream can usually be traced by following the more luxuriant vegetation which grows along the banks. In open country, taller vegetation often marks the stream course; and in desert areas, you can follow

streams by the lighter tone of their sandy beds.

6. Canals are distinguished from streams by their parallel banks and straightness.

Vegetation.--1. Woods appear as dark, irregular masses. Because the trees cast deep shadows, woods reflect little light and are relatively dark. In winter most woods



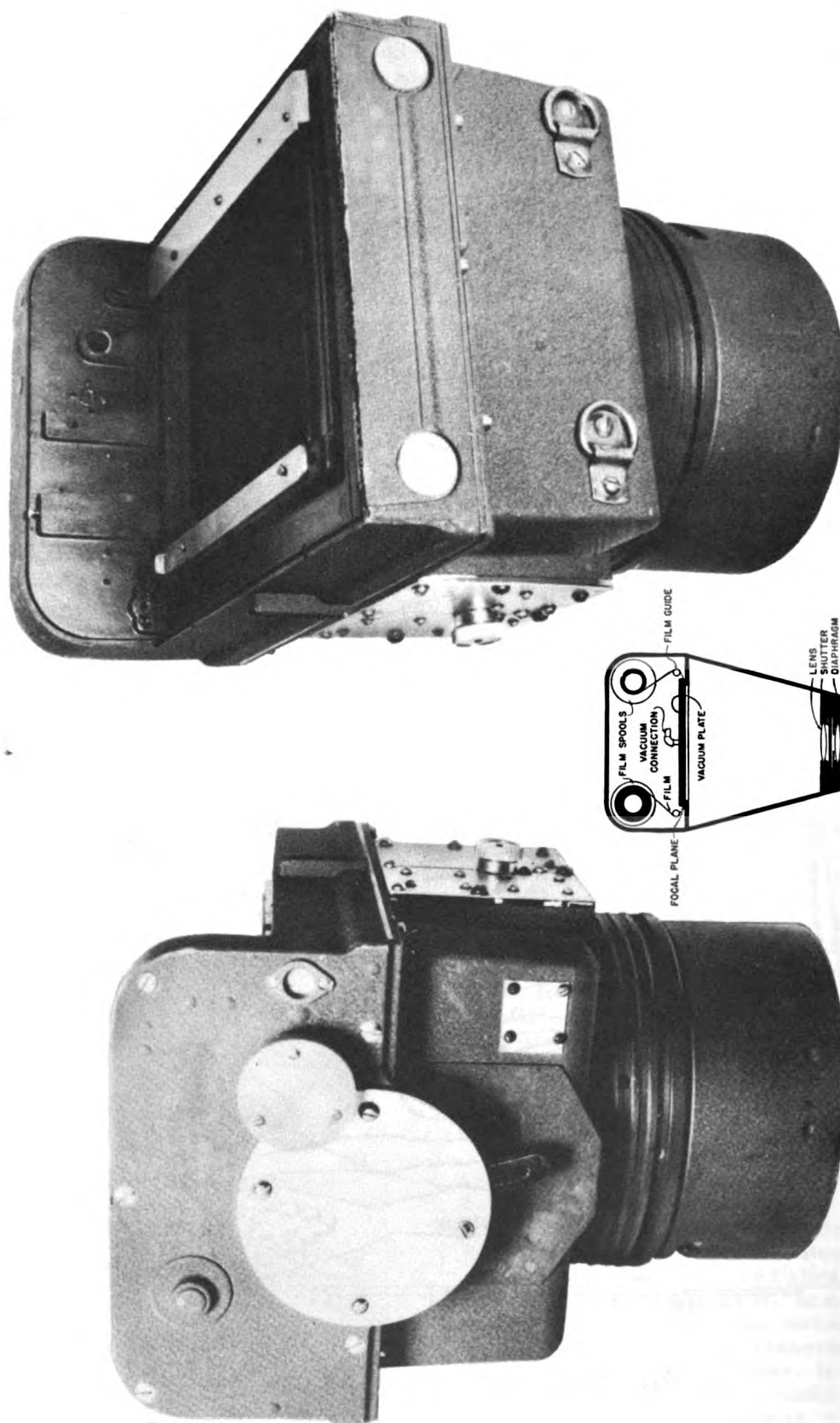


Figure 7-47.--Photo of K21 converted to a hand-operated, film pack camera.

show a confusion of tree skeletons, through which light penetrates to reveal roads, trails, drainage lines, and relief. The outline of the wooded area is more sharply defined in summer.

2. The appearance of meadows or grassy pasture areas changes with the season. Areas with poor drainage have heavier and greener vegetation and photograph dark. You should be careful not to mistake cloud shadows for wet areas. Tall grass appears darker than short grass because it casts longer shadows. Trampling changes the texture of a field, alters the reflection of light, and creates a different tone.

Agricultural Features. --1. Cultivated fields usually have regular shapes and tones. The tones vary with the stages of cultivation, crop growth, and harvesting. Grain in shocks are regularly spaced dots on a lighter background.

2. You can distinguish orchards from woods by the regularity of the rows. Coconut plantations in tropical areas show a special honeycomb appearance because of the shape and closeness of the individual trees.

Lines of Communications. --1. Roads are very prominent in aerial photos, and the details of the road network are easily observed. As a rule, roads appear as narrow bands or light lines.

Concrete roads are almost white and ribbon-like. Oil drippings show up best on such roads. Asphalt roads appear darker. Primary gravel and sandclay roads are usually wider and lighter. Unimproved roads do not have the even width and tone of the paved highways, and usually have sharper curves. Ruts, holes, and stones give a mottled appearance.

2. Footpaths appear as fine, narrow lines, light in tone, which wind about considerably.

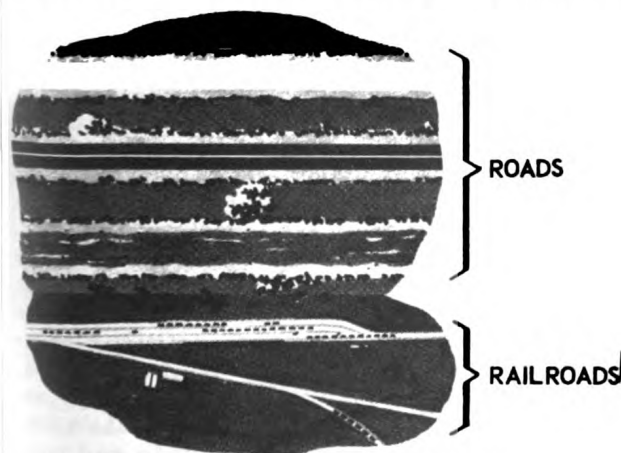


Figure 7-48.--Roads and Railroads.

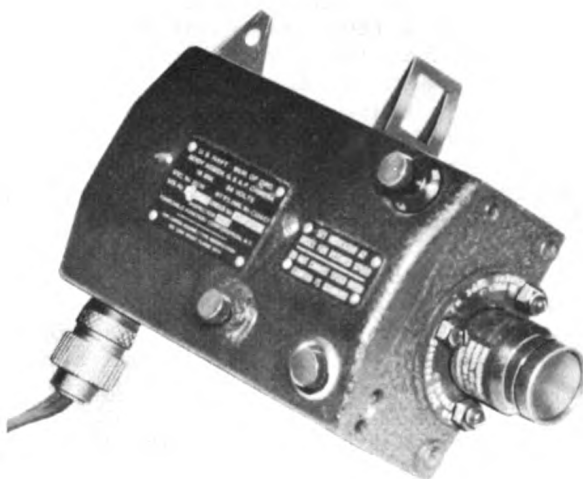


Figure 7-49.--Conversion of gun sight aiming camera to battery operated 16 mm. motion picture camera.

3. Railroads are usually darker, narrower, and straighter than highways. They have long, easy curves and heavy cuts and fills. Identify them by telegraph poles, side tracks, stations, and railroad bridges. The line of rails is usually not visible except on large-scale photos, but the road ballast often shows up very light.

Power lines, especially high-tension electric power lines, are indicated by straight right-of-ways. Slashings for these lines through forests are clearly evident and are darker than roads. The right-of-ways are straight even in hilly country.

Pipe Lines. --Pipe lines also follow lanes of cleared vegetation, but these are narrower than the lanes for power lines. Across cultivated fields they are lost after a few plowings.

REFERENCE

TM 1-219 Basic Photography
TM 1-220 Aerial Photography

MODEL BUILDING

Many CAP wings have found that model aircraft building is not only one of their most popular activities, but one of the most useful as well; not only as a training aid but also as a stimulant to the enthusiasm of both senior and cadet members.

A well-rounded model aircraft project can benefit the CAP unit in many ways.

1. It should go hand-in-hand with classroom work in aerodynamics, aerial navigation and aircraft types and structure, furnishing a practical demonstration of the theoretical principles presented in the CAP Aviation Study Manual (Book II of this series).

2. It can be a valuable means of developing an aircraft recognition program, utilizing both scale and silhouette models.

3. Model aircraft competitions can be valuable fund-raising media, and are excellent for stimulating community interest in aviation in general and the CAP unit in particular. They also serve admirably to draw senior and cadet groups together in a common interest.

Scope. All CAP units, senior and cadet.

Equipment. Although gasoline-powered model aircraft can run into a considerable financial outlay, and may be beyond the means of many CAP members, it is not necessary to use such expensive equipment.

Hand-launched or towline gliders can be built for a minimum of expense and can form the basis for an interesting and profitable program. Only slightly more expensive are the rubber-powered model aircraft, which may be either of the stick or cabin type. Any of these types can be used both in classroom demonstrations and in actual competitions.

Units desiring to get into the free flight or control line gas-powered classes may find it expedient to build one or more models as a unit project so that the cost is borne either by the unit itself or apportioned among the membership. Jet-propelled model aircraft also are becoming more and more popular.

One CAP wing maintains a wing engine pool as a means of keeping costs down. Since the engine represents the greatest expense in the

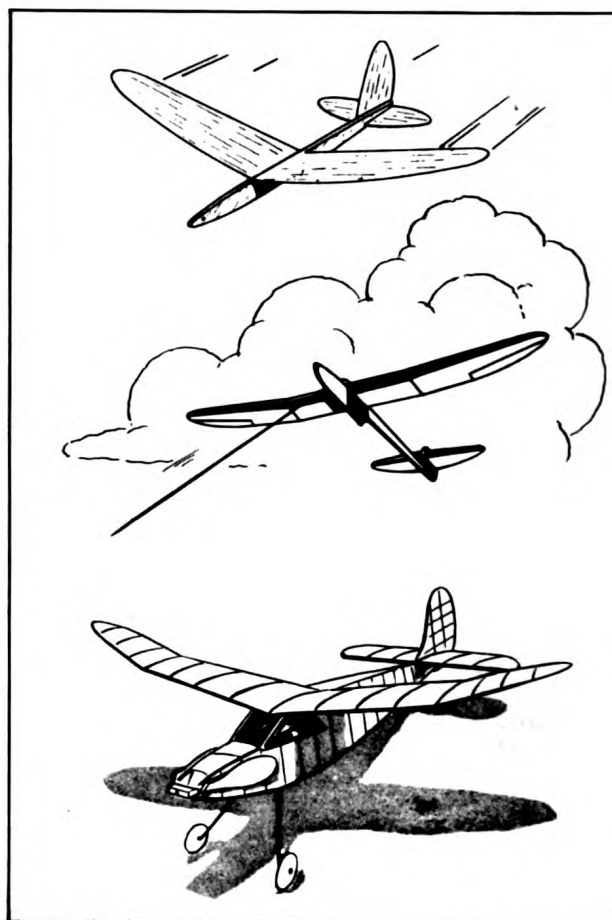


Figure 7-51.--(Top to bottom): Hand launched glider, tow-line glider, and rubber-powered model.



Figure 7-50.--There's a model plane for every pocketbook.

construction of a gas-powered aircraft, many units which might not otherwise be able to participate in the higher competitive classes have thus been enabled to do so with a minimum of cost.

Competitions. Model aircraft competitions are an excellent activity at all levels--flight, squadron, group or wing--and can do much not only to stimulate interest in aviation generally but also to bring the CAP unit closer to its community.

Competitions between units and between wings are encouraged, but because of the magnitude of the organizational work involved, CAP does not itself sponsor such contests above the wing level. Units and wings are encouraged, however, to send entries to the national and international competitions sponsored by the Academy of Model Aeronautics, and by the Plymouth Motor Corporation, and CAP is able in most cases to cooperate to the extent of providing transportation to and from the scene of the meets.

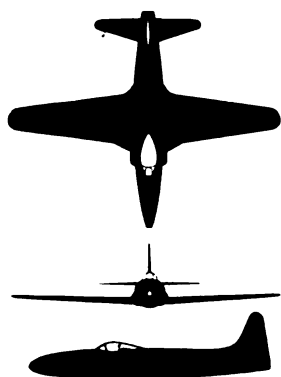
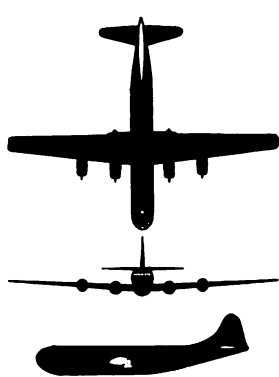
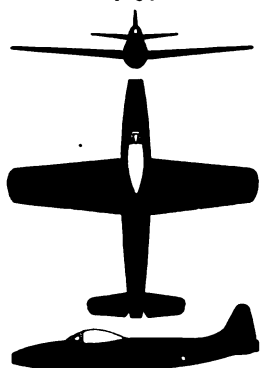
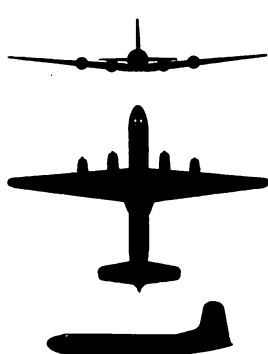
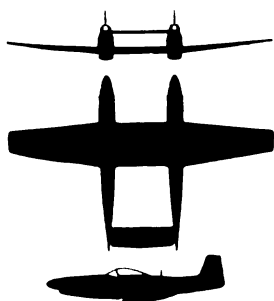
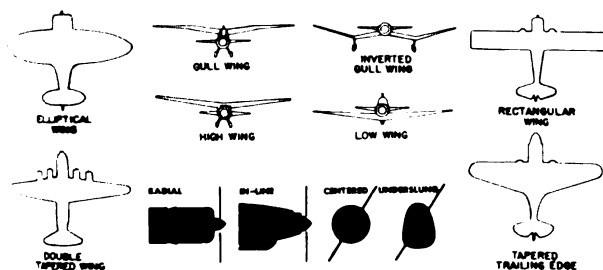
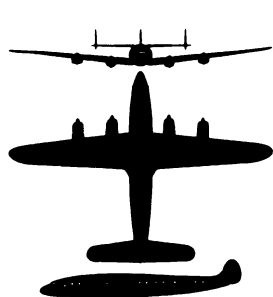
P-80 SHOOTING STAR**C-69 CONSTELLATION****P-84****C-74 GLOBEMASTER****P-82****C-97 STRATOCRUISER**

Figure 7-52.--Types of military aircraft in silhouette.

Contest Classes. Classes in model aircraft competitions, aside from the basic, hand-launched glider which should be the first project of all CAP units, fall into 10 general groups. They are:

1. Indoor Stick. Simply a wing and tail assembly attached to a stick, with a propeller driven by a rubber band.

2. Indoor Cabin. These models, also driven by rubber bands, have built-up, enclosed fuselages.

3. Towline Glider. Launched from the ground by means of a towline, which is released at the end of the tow.

4. Outdoor Stick. A larger model of the indoor stick craft.

5. Outdoor Cabin. A larger version of the indoor model.

6. Free Flight. Gas-powered; self-explanatory.

7. Control Line. Speed; gas-powered models are controlled in flight by control lines varying in length from 50 to 70 feet.

8. Control Line. Flying scale; models of full-size aircraft.

9. Control Line. Precision; same, but aircraft are judged on maneuvers rather than on speed.

10. Control Line. Speed; jet-propelled; self-explanatory.

MARKSMANSHIP

Purpose.--1. Purpose of this activity is to promote interest in small arms training, both as a sport and as a means of strengthening our National defense.

2. To develop the qualities of sportsmanship, fair play, manliness, self-control and cooperation so essential to success in life.

3. To encourage competition in marksmanship between teams and individuals and to promote safety.

General.--Rifle clubs may be organized among CAP and CAPC personnel. Such clubs may embrace the entire squadron or flight, or consist only of individuals possessing a special interest in such events. Instruction and just practice shooting soon loses its appeal if some guide posts are not established against which to measure developing skill and a means to recognize such skill with tangible rewards. Where suitable facilities do not exist for an independent program within the Civil Air Patrol organization, it is recommended that interested units or individuals affiliate with the National Rifle Association, which is in a position, thru its nation-wide organization, to offer standards



Figure 7-53.--Many CAP units find marksmanship one of their most popular activities.

of training, a variety of awards and a program of individual and team competition.

The National Rifle Association acts for the shooting sport in much the same way as the Amateur Athletic Union does with other sports. It sets the rules, maintains records, operates national shooting programs and championship events, organizes clubs, prepares instruction manuals and training aids, and publishes *THE AMERICAN RIFLEMAN*, a magazine devoted to guns and shooting. Organized in 1871, the National Rifle Association is one of the oldest and strongest sportsmen's organizations in this country. It is a non-profit, non-sectarian and non-political membership corporation. It is recognized by Congress as the agency through which American citizens are trained in small arms marksmanship. It is not a branch of the U. S. Government. It is not a trade association, nor does it sell shooting equipment. It does "sell" a shooting program to the clubs and individual members of the NRA. A minimum of 10 active members is necessary to obtain a National Rifle Association charter.

Membership.--Adult membership is open to U. S. citizens over 18, both men and women.

Annual membership subscription rates include the *AMERICAN RIFLEMAN* and are \$4.00 for one year, \$7.00 for 2 years and \$10.00 for 3 years.

Junior Membership is open to boys or girls under 19 years of age. Membership rates are fifty cents for the calendar year or \$3.00 for one full year including the *AMERICAN RIFLEMAN*.

Applications.--Requests for membership and charter applications should be addressed to the National Rifle Association, 1600 Rhode Island Avenue, N. W., Washington, D. C.

Shooting Equipment

Many new shooters erroneously believe that the National Rifle Association is a source from which they can purchase or obtain free supplies of rifles, telescopes, targets, ammunition, shooting coats, and other equipment. The NRA is a service association of shooters and shooting clubs. Its only "product" is a shooting program and the things that go to make that program successful--things like appropriate instruction manuals, registered tournaments, junior and college events, etc. Club members who wish to purchase shooting supplies and equipment must do so just as they would buy fishing tackle, a new tennis racquet, a baseball bat, or swimming suit--through the local sporting goods dealer or shooting supplier.

Office of the Director of Civilian Marksmanship

Probably the main reason so many shooters think equipment is available through the NRA is because they confuse the functions of the Association with those of the Office of the Director of Civilian Marksmanship. The ODCM is a government agency, under the United States Department of the Army and is entirely separate from the NRA. However, the regulations under which the ODCM operates permit that office to grant valuable

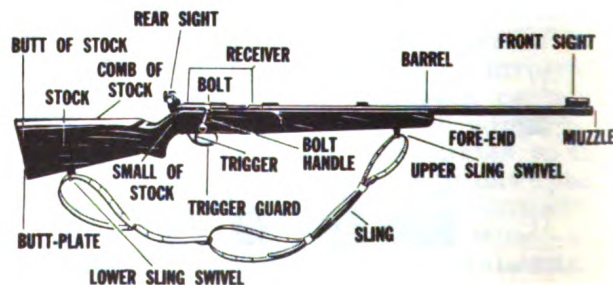


Figure 7-54.--Nomenclature of the rifle.

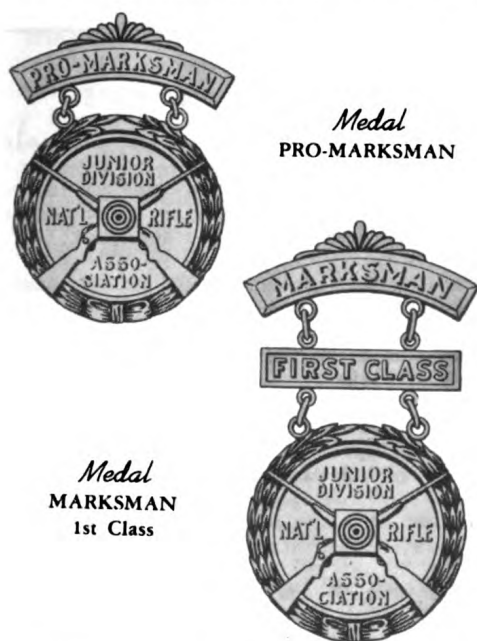


Figure 7-55.--NRA Marksmanship Medals.

aid to NRA chartered junior rifle clubs. This assistance is not received automatically when a club charter is issued by the NRA. The club must enroll with the ODCM and make definite application for the equipment and supplies desired and for which it is eligible. Certain groups already receiving similar help from the Federal Government (such as military schools receiving issues of rifles, targets, and ammunition) are not eligible for ODCM aid. The quantity of equipment and supplies issued to junior rifle clubs varies with the annual appropriation of funds for the ODCM, with the equipment made available by the Ordnance Department, as well as with the number of clubs requisitioning these supplies. However, the regulations under which the ODCM operates permit that office to issue one .22 target rifle for each 5 male club members between 12 and 18 years of age, inclusive, up to a maximum of 10 rifles to any one club. Four hundred rounds of .22 ammunition for each such club member may be issued to the club annually, together with a club allotment of one thousand 50-foot targets. To secure such help from this government agency the requirements for formal enrollment with the ODCM must be met. This involves submitting a report of club membership and facilities, letters of recommendation for the club instructor, and filing of requisition forms covering the equipment and supplies desired. If an issue of rifles is requisitioned a surety bond must be filed with the ODCM to cover the Government

against possible loss or damage to this equipment. (Premium approximately \$10.00 for 2 years.) When this bond is secured from one of the bonding companies approved by the United States Treasury Department, all these club papers are reviewed at the ODCM. The bond itself is forwarded to the Judge Advocate General's Office of the Department of the Army. When approved by this office it is returned to the ODCM and formal action on the requisition then can be taken. Shipping orders are written and transmitted to the arsenals where these supplies are stored. Then the rifles, ammunition, etc., are shipped to the club from those arsenals. The club must be prepared to pay the shipping charges on delivery. Both the ODCM and the NRA recommend that the equipment be insured. This will protect the individual carried as principal on the bond from any personal financial loss if anything should happen to the rifles. From this detailed account of the procedure you can see that, including mailing and shipping time, some weeks will pass before actual delivery of the supplies requisitioned can be expected. Unnecessary delays can be avoided by carefully following all instructions, by properly filling out all forms, and by being certain to send the ODCM all required papers promptly. Should difficulty be encountered in securing a bond locally, contact the NRA Club Activities Division. In all other respects correspondence regarding this government assistance should be addressed to the Office of the Director of Civilian Marksmanship, United States Department of the Army, Washington 25, D. C., Attention: Club Branch.

Once the initial issue is received the club's responsibilities and benefits do not cease. The ODCM mails each club on its rolls annual report and inventory forms. These should be promptly and completely prepared and returned to that office. The future allotments for your club will be governed to a large extent by those reports. The assistance given by the government to clubs is for the purpose of promoting military marksmanship. Those clubs which accept this aid must follow the instructions from the ODCM as to firing. The text to be used is the Army Field Manual 23-10. This was written for the .30 caliber rifle but is applicable to the .22 rifle also. All club members will fire the prescribed ODCM junior qualification course. The ODCM furnishes the proper forms on which to report this firing and issues special qualification badges to those club members meeting the score requirements. Occasionally club members, parents, or club sponsors,

noting that this government assistance is procured through a branch of the United States Department of the Army, assume that enrollment with the ODCM may be connected in some way with universal military service or selective service, or involves club members in some sort of reserve status. Such assumptions are entirely false. Obviously training in marksmanship is of great value in our country's national defense picture but the records and work of the ODCM are entirely independent of any recruiting or military selection program.

Training Aids

Various training aids can be utilized to make the basic instruction most effective. The Junior Instructor's manual contains working drawings for sighting bars, triangulation equipment, and the Winter Device. A fine set of rifle instruction wall charts can be obtained from the NRA Sales Division at one dollar per set. Each set consists of seven charts (25 x 38 inches) dealing with rifle and ammunition nomenclature, sights and sight adjustment, use of the sling, safety rules, and standard shooting positions. By application to the NRA Public Relations Division, affiliated clubs may secure the use of several fine 16 mm sound motion picture films. One color film, "Trigger Happy Harry," has a plot built around the principles of firearms safety in the home and in the field. This is an excellent film, not only for your own club members, but for their parents and everyone in the community. "How to Shoot a Rifle," is a black and white instruction movie on small-bore rifle shooting. These films are furnished without charge except that the club pays the necessary transportation expenses.

AIR AND GROUND SAFETY

There is no such thing as an unavoidable accident, either in the air or on the ground.

Accidents do not happen; they are caused. Usually they are caused by faulty judgment on the part of the pilot, in the case of accidents aloft.

In peacetime, there are few mishaps which the trained pilot could not prevent, except perhaps collision with a bird, and that is something most birds try very hard to avoid.

If the pilots had the sure instincts that the birds, in their millions of years of flying experience, have packed into their heads, there would be much less need for safety rules.

HERE ARE 10 COMMANDMENTS

you must always observe at an airfield:

1. Do not go on the landing area unless you are authorized to go there or are conducted there by a flyer or airfield attendant.
2. Do not drive an automobile on the landing area without permission.
3. Never smoke on the apron or within 50 feet of any airplane.
4. Do not start or warm up an airplane when hangars, shops, other buildings, or persons are in the path of the propeller stream.
5. Do not start or warm up an airplane when it faces another airplane.
6. When you service aircraft with fuel, ground all tanks to discharge static electricity.
7. Do not fuel an airplane while the engine is running.
8. When an airplane is started or fueled, make sure an attendant stands by with a fire extinguisher.
9. Do not move a propeller unnecessarily and at all times stand away from it. A propeller is as dangerous as a buzz-saw.
10. When you are helping to move an airplane, do not take hold of the middle of struts or braces, rudder, or other weak places. The strong places are at the ends of the braces and along the fuselage. Weak places generally are marked on an airplane.



But man, being a ground animal, can fly safely only by most careful study; by checking aircraft and weather before each flight, and by keeping alert every minute he is in the air.

Sudden death often is the price paid by the ignorant, the reckless and the unwary.

CAA statistics charge a great majority of fatal accidents in private flying to pilot error: staying aloft when the weather's closing in, or after dark, without proper instruments; low level stunting, going aloft with student pilots not authorized to carry passengers, running out of gas over terrain which offers no safe landing area, going into a spin because of failure to maintain flying speed, etc.

All of those procedures are invitations to a very unpleasant fate, but they still happen every day.

They all would be prevented by the simple exercise of good judgment.

Mechanical failure is blamed for a few crashes, though manufacturers of light aircraft today are building planes as safe as it is possible to make. But even mechanical failures usually can be prevented by proper maintenance and adequate inspection of the airplane before the takeoff.

The wartime flying of Civil Air Patrol, although inherently more dangerous than the normal civilian flying, showed a far lower accident rate than the average for all light-planes in peacetime. The reasons: (1) good training and continual refresher training, (2) good aircraft maintenance, and (3) strict inspection of both pilots and planes.

There is no reason why any CAP unit today cannot maintain as good a record at its home airport through its program of training and voluntary discipline in which the novices fly under the friendly guidance of the seasoned airmen.

Too many fliers outside CAP get their private pilot licenses by easy check-out, which does not require knowledge even of navigation or meteorology. Then they stop studying. To fly across country with such a pilot is approximately 100 times more dangerous than an airline flight.

Even with tomorrow's airplane, which will be inherently stable and as nearly spin-proof as it is possible to build them, there will be no substitute for human skill, alertness and good judgment.

CAP has taken a firm stride forward along the path of air safety with its nationwide programs of aviation education and training, its orientation, familiarization, and proficiency flights; its Link and GCA training, and its selective program.

But the program won't do it by itself. It's up to the individual.

Fly safely and stay alive.

And it is no less necessary to stay alert and observe the safety rules on the ground.

You can get killed just as dead by a whirling propellor, a fall on a greasy hangar floor, or the use of improper fire-fighting procedures, as you can in an involuntary effort to bore a hole in the side of a mountain with the nose of your aircraft.

Human nature being what it is, however, accidents will occur, and it is well for all CAP members to know something about crash procedures and fire-fighting.

The crash crew. The typical crash crew consists of a crew chief, who directs the crew and lends a hand wherever necessary in an emergency; a driver, who also operates the fire-fighting pump; hand-linemen, who operate the hand lines of the fire-fighting apparatus; and rescuemen, whose job it is to remove aircrew members from the wreckage as quickly as possible.

The crash truck. It contains a crash kit, with equipment with which to break into aircraft; a first aid kit, and fire-fighting equipment. The extinguishing agent may be foam, a mixture of power and water which excludes oxygen and smothers fire; carbon dioxide (CO_2), which has a like effect; carbon tetrachloride, a heavy liquid; or water (which won't put out a gasoline fire, but will protect rescue men attempting to get into a burning plane).

Planning. Members of crash crews should be thoroughly familiar with the countryside adjacent to their air field, so they can get to the scene of a crash in the shortest possible time. A few seconds saved may save a life. They also should be familiar with the location of dangerous parts of all types of aircraft at their field, and where fuel lines are, so they can be cut off quickly.

SOP. En route to the scene of a crash, watch out for aircraft that may still be taxiing, landing, or taking off. One accident at a time is enough. On arrival at the scene, get the air crews out immediately. Cut off fuel selector switches, booster and transfer pumps and remove hazardous materials such as flares or light pistols as soon as you get into the airplane. Remove injured crew members carefully, and move them to a safe distance from the aircraft. Ground (electrically) the aircraft as soon as possible and plug broken gas tanks (with wood, putty or adhesive tape). Watch out for sparks.

Fire-fighting. If the aircraft is afire, move in from the windward side with your fire-fighting equipment. Direct the foam or other agent along the edges of the burning fuel and allow it to work back until the liquid is covered. Don't drive the fire back into the cockpit.

Moving the plane. Don't move the plane until you are sure the fire is out, and until all fuel tanks have been emptied. Turn all switches to the "OFF" position. Disconnect batteries. If you can't immediately remove the aircraft, anchor it securely and place a guard on it to keep spectators away.

The primary purpose of any safety program is accident prevention.

REFERENCE

- CAP Letter 537.5 Aircraft Accident Report.
CAP Reg. 62-Series Flying Safety.
Reg. 50-1-1A-1B Aeronautical Rating Program.
Reg. 60-Series Flying.
AF Reg. 5-7 Flying Safety Publications.

ORIENTATION, FAMILIARIZATION AND PROFICIENCY FLIGHTS

Flight indoctrination is to be 3 hours of experience that is not pilot training in any respect, but is intended to (1) provide students with an opportunity to experience practical applications of scientific principles studied in aviation class rooms; and (2) provide an opportunity for Instructor and students to become oriented to the use of the air as an efficient means of communication and transportation.

This is an extremely important experience in the lives of students of aviation. It is an experience which can be of much benefit, especially if throughout the period pilots emphasize the importance of aviation from a personal, civil, social, and industrial aspect of complete conformance to commonsense safety and traffic regulations. It is desirable that the indoctrinee enjoy his experience while learning about aviation, but he must also be thoroughly indoctrinated to the fact that aviation is a serious business.

Safety at the airport is paramount and although indoctrinees may have been thoroughly "briefed" on flight-line safety customs and traditions, the indoctrinee pilot should assume responsibility for the proper conduct of the indoctrinee in and around the plane.

Standardization of the indoctrination flights to insure that all aviation students get complete and well-rounded experiences is neces-



Figure 7-56.--A high spot in a cadet's experience: first flight.

sary because students may ride with several pilots during their three hours. For this reason, a brief outline of the flight syllabus follows.

Flight Indoctrination Syllabus

FLIGHT I--30 minutes. Introduction to plane, inspection, taxiing, normal attitude in flight.

A. Inspection of plane. Point out the routine inspections to be made prior to take-off.

B. Cockpit familiarization. Point out the routine checks made in the cockpit prior to take-off.

C. Contact. Point out routine procedure in starting the engine and precautions to be observed.

D. Taxiing. Point out use of controls while taxiing and safety precautions necessary.

E. Take-off. Point out and explain selection of runway, engine run-up, and take-off. Call attention to acceleration, moment when air-borne, normal climbing attitude, and use of tachometer.

F. Normal attitudes. Point out position and attitude of aircraft in normal flight with various throttle and control positions.

G. Orientation. Point out familiar landmarks, prominent ground features, and position of airport with respect to surrounding community.

H. Landing. Point out approach to traffic pattern and use of tower and controls in landing. Call attention to attitude of plane in flare-out and landing.

FLIGHT II--30 minutes. Review of procedures in Flight I, demonstration of stability in three dimensions of control.

A. Stability in level flight. Point out how airplane will regain normal attitude hands-off from climb to dive. Demonstrate use of trim tabs. Call attention to continued stability near stalling speed.

B. Stability inturns. Point out how plane will maintain turn with controls neutral.

C. Torque. Point out relation of torque to stability and correction needed.

FLIGHT III--30 minutes. Review of previous important points, demonstrations of climbing and gliding turns, demonstration of loads and stresses.

A. Loads and stresses in normal flight. Point out increase in flight load by increasing angle of attack and making shallow dive followed by mild pull-up, repeating at various speeds. Demonstrate how increased speed increases load.

B. Loads and stresses in turns. Point out rapid increase in load during a series of turns increasing to 70°.

C. Rough air. Point out effect of rough air on loads and stresses.

FLIGHT IV--30 minutes. Review of previous important points, demonstration of drift corrections, coordination and straight and level flight.

A. Drift. Point out effect of wind and demonstrate methods of correction.

B. Coordination. Demonstrate uncoordinated turns and use of controls in turns.

C. Straight and level. Demonstrate straight and level flight, flying with visual reference to check points and horizon.

FLIGHT V--30 minutes. Review of important aspects of previous lessons, demonstration of use of instruments during flight.

A. Altimeter. Point out relation between altimeter and rate of climb as measured by time in climb and altitude reached.

B. Tachometer. Point out effect of shallow dives and climbs on R.P.M.

C. Air Speed. Point out how attitude and air speed are related.

D. Compass. Point out effect of turns on compass.

E. Demonstrate use of any other instruments installed in plane.

FLIGHT VI--30 minutes. Demonstration of effect of weather and air formation on flight. (Depending upon local conditions, this flight may be made separately or the various aspects combined with other flights.)

A. Clouds. Point out as many types of clouds as possible. Call attention to air conditions associated with clouds.

B. Temperature. Point out temperature differences at altitudes and how altitude affects rate of climb.

C. Terrain. Point out effect of terrain, hangars, etc. on air stability.

D. Visibility. Point out air conditions which affect visibility.

OPTIONAL FLIGHT--1 hour. Demonstration of pilotage, dead reckoning, radio aids. When facilities do not permit a flight of this duration the time should be reduced to 30 minutes and an eighth flight added.

A. Flight plan. Make a flight plan (file if possible) covering a one-hour cross-country flight to a definite point and return with stop en route if possible.

B. Navigation. Assist student in doing pilotage and dead reckoning. Point out use of compass.

C. Radio aids. Demonstrate uses of radio aids.

D. Safety. Point out interruptions due to weather and mechanics which can take place and establish the fact that safety is the most important consideration in flying.

Indoctrination flights are given by CAP members who have demonstrated their ability to pilot the aircraft, and who have logged a minimum of 200 hours of solo time as a private pilot or higher.

Proficiency flights are conducted as a regular part of the CAP training program. These practice flights progress from relatively simple missions to the more complicated ones designed to develop safe and efficient methods of operation for aircraft, air crews and ground crews alike. The numerous missions and activities which make up the CAP program afford ample opportunity for participation by all members. Reference: 50 Training; 55 Operation; 60 Flying; and 62 Flying Safety.

LINK TRAINERS

In flying, as well as other activities, practice makes perfect.

The C-3 and ANT-18 are same type used by the Air Force to train its pilots during World War II.



Figure 7-57.--Link Training.



Figure 7-58.--Link Trainer and Control Desk.

It has facilities with which to teach flight techniques, flying under simulated weather conditions, and navigation by radio and other navigational aids. The complete trainer installation consists of two units: (1) the fuselage, which is provided with controls, throttle, and instruments like those found in a single-seater airplane; and (2) a desk for the instructor. The fuselage is so mounted on the base that by moving the controls the pilot can turn, climb, glide, and fly straight and level as he would in an airplane. The flight instruments on the pilot's panel react properly to movements of the throttle and to changes of fuselage attitudes. Additional instruments for radio navigation and instrument landings are sometimes provided.

The desk, to which the trainer base is connected electrically, contains a simulated radio with which the instructor produces the radio signals found in actual flight. The radio also simulates a radio telephone transmitter, enabling the student and instructor to talk to each other, reproducing such effects as occur between control towers, air traffic centers, and an aircraft in actual flight.

An automatic recorder, or crab (so called because it appears to travel sideways and backward, as well as forward) is placed on a special chart, or map, on top of the instructor's desk. It traces in red ink the pilot's actual course over the ground. Thus, when the flight is over, a record of it can be used for instruction purposes, or to point out mistakes that the pilot may have made.

The primary purpose of the Mark IV Navigational Trainer is to provide ground facilities for training pilots in dead reckoning. It may also be used for navigation practice and check-out. Pilots may run through a simple mission or may execute a complicated search and interception. Pilots' instruction in the theory may complete the entire range of navigational problems usually solved with the Mark IV or Mark III plotting

boards. At the same time students can be checked in radio procedure through a telephone installation simulating two-way radio.

The Mark IV Trainer is a complete mock-up of the cockpit of a training plane. It is mounted on a cart which may be covered to simulate instrument flying. It is powered with storage batteries, and in response to manipulation of all normal controls moves over any reasonably level available space at the rate of one foot of travel per nautical mile of flight (two and one-half feet a minute at an indicated speed of 150 knots). The course flown by the pilot is traced on the floor by means of a chalking device located at the pivotal points of the trainer, thus, an accurate record of all maneuvers, as well as the start and finish point is provided. A student's flight pattern can be checked against pre-computed reference points previously marked on the floor. Such reference points are visible to the student only through a sliding hatch at his feet.

School Links which are greatly simplified versions of either the C-3, ANT-18 or Mark IV Trainer have been developed by the Link Trainer Corporation, of Binghamton, New York, for installation in high school air centers to be used in connection with Air Age Education.

Link Trainers are available to CAP members for training purposes. By far the most important function which these Link Trainers serve is to familiarize CAP personnel with the navigational aids maintained by CAA and other local aeronautical agencies and the proper use of the two-way radio. The results of such training will be sound operating procedures and a very substantial increase in the margin of safety.

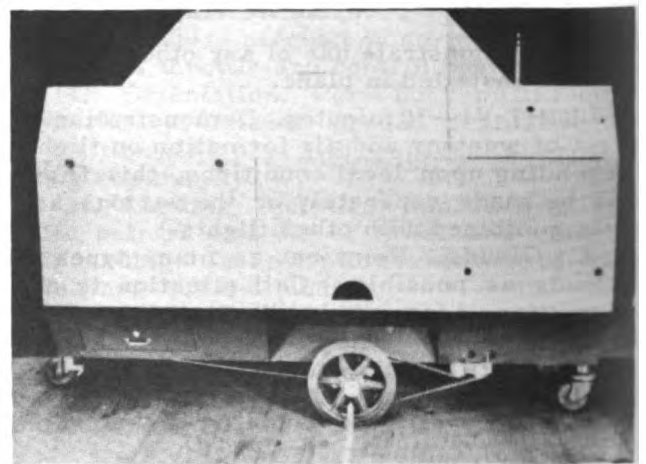


Figure 7-59.--Mark IV Trainer.

GROUND CONTROLLED APPROACH TRAINING (GCA)

GCA provides facilities for directing the movement of aircraft in the vicinity of an air-drome, and over a predetermined glide path, for a safe approach to the proper runway, under conditions of adverse visibility. Accurate and continuous information regarding the location of incoming aircraft with respect to the predetermined glide path is presented to ground operators in the form of range, azimuth, and elevation data by the radar portion of the system. This information is interpreted by the operators as lateral and vertical deviations from the predetermined glide path adjusted to suit the different types of aircraft and communicated to the pilot of the incoming airplane in the form of instructions regarding the course he must fly in order to make a proper and safe approach to the runway. Through such instructions the pilot is directed to bring his plane to a point in line with the runway and below the ceiling, enabling a visual touch down in landing.

In addition to providing range, azimuth, and elevation data on a particular airplane, the system, under favorable terrain conditions, supplies range and azimuth information on all aircraft within a radius of 30 miles at elevations up to 4,000 feet. This information is utilized in controlling of aircraft in plan position and elevation preparative to final approaches.

GCA system of instrument approach differs from previous systems in that all specialized equipment for effecting the instrument approach is located on the ground. The only equipment required in the airplane is a two-way radio communications set operating in the h-f or v-h-f band.

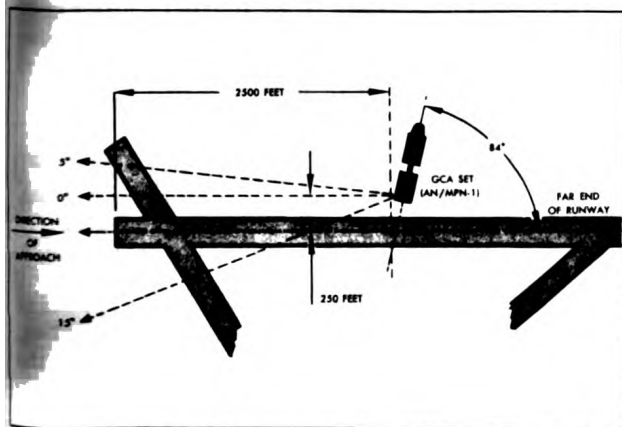


Figure 7-60.--GCA Station Layout.

The radar equipment of GCA is situated on the side of the runway approximately 2,500 feet from the approach and 250 feet from the center line of the runway. Under the existing program of training, CAP members are eligible to participate in simulated GCA landings. Practice eliminates the guesswork and instills confidence needed in time of emergency.

INTERNATIONAL MORSE CODE

It may seem unnecessary to you to learn International Morse code since you can transmit and receive messages by voice. Code, however, is much superior to radio telephone for three reasons:

1. When you use secret code, you can keep the transmissions unintelligible to anyone who does not have facilities for decoding.
2. During periods of poor receiving conditions such as those caused by static, ignition noises, fading signals, etc., code is still readable after phone transmissions are out.
3. The range is greater when using code and cost of equipment is considerably less.

You can receive only as well as the person sending can transmit. Hence, good sending is just as important as good receiving. It is important, therefore, to begin your sending practice in a correct manner. Bad habits acquired now will stick with you later.

You must adjust the key properly and space the contacts correctly before you begin to transmit. The spring tension (coiled spring) on any key must be adapted to the individual.



Figure 7-61.--Code Practice.

The spring adjusting screw controls this tension. If you have trouble in forming dits and dahs, change the spring tension until you are able to send both elements easily and correctly.

To acquire great speed at code, considerable practice is necessary. It is not hard to be moderately fast at it. However, we will attempt here only to give you a knowledge of code and sufficient speed to permit you to send and receive.

Code plays an important part in many operations, and may prevent disaster in emergencies not only in the air but on land or at sea.

As a student, you must have confidence in your ability, and be determined to follow instructions. Thus you will avoid learning certain bad operating habits which otherwise would retard your progress. Remember that code is not difficult, if you follow a few simple rules.

The first step is to memorize the signals. It is important that you learn the sound of each signal correctly at the beginning. Instead of visualizing the "dot" and "dash," try to think of them by the sound "dit" for "dot," and "dah" for "dash."

You will need to concentrate especially hard while learning the signals. With repetition, you will soon recognize the sound without thinking too much about it. Learn a few sig-

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R
S	T	U	V	W	X
Y	Z	1	2	3	4
5	6	7	8	9	Ø

Figure 7-63.--Uniform printing is essential.

nals at a time, learn them thoroughly, and learn them by their sound.

Regular practice will train your mind and ear to recognize the sound in much the same way you now instantly associate meanings with the sound of spoken words. You can practice the signals which follow either by repeating the code to yourself or by whistling it.

It is important that you write down everything you hear and recognize. Listening without recording what you hear accomplishes little. If you miss something, leave it out and write what you recognize. There are many available short-wave broadcasts which will help give you practice.

LESSON I

E dit dit dit dit dit dit dit di
E E E E E E E E

We'll consider the dit characters (letters first. They are E, I, S, and H. Make the dit by closing and opening the key quickly. The sound produced is the letter E. Remember the sound is the character. Memorize the sound, not dits and dahs.

Now make a string of E's, allowing the same space between them. Repeat this procedure until you've firmly fixed the sound

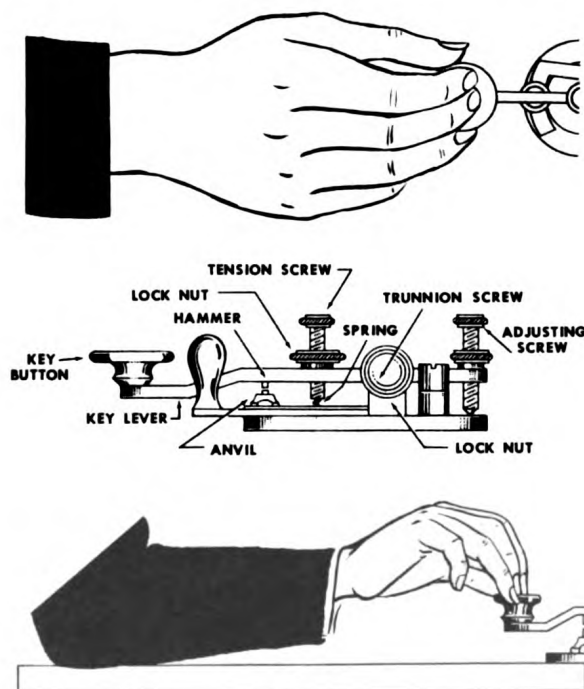


Figure 7-62.--Proper Method of Keying.

dit in your mind. Keep it short, and watch your spacing, making it uniform.

I ditdit ditdit ditdit ditdit ditdit
| | | | |

The I is formed by 2 dits in quick succession. Key the letter so that it sounds like ditdit, not dit dit, which would indicate 2 E's. Repeat as you practiced the E. Listen to the character as you sound it, and remember to space.

S ditditdit ditditdit ditditdit ditditdit
S S S S

The character S is next in the dit series--3 dits in a row. It's ditditdit, not dit dit dit. Practice this like the others, remembering to space.

H ditditditdit ditditditdit ditditditdit
H H H

If you have difficulty forming this letter, or any of the previous characters, say it aloud to yourself. The H consists of 4 dits in quick succession, which you can say like this: ditditditdit. Be sure to key them evenly, smoothly. Now practice transmitting the H.

Exercise One

Review all the dit characters you have covered before you undertake the word exercises. Be careful to concentrate on one letter at a time. Do not skip about too much before you are well acquainted with each. Practice these until you can recognize each one without having to hesitate to figure it out.

When confident that you know them, begin sending words made up of the letters you have learned. Keep the space between letters the same in each word. Key the individual letters just as you did before.

Now try the following exercises, striving for smoothness and uniform characters:

h e ditditditdit dit

h i s ditditditdit ditdit ditditdit

s h e ditditdit ditditditdit dit

s e e ditditdit dit dit

LESSON II

Spacing.--In the first lesson, you learned the importance of forming characters accurately. You also saw the necessity for proper and uniform spacing. Proper spacing is absolutely necessary if you are to develop a good sending fist. As you begin to practice additional characters, maintain even spacing at all times until you know the alphabet. Uniform keying develops proper timing.

You must know how long to pause between the characters of a word, and between words in a sentence. This is not difficult to learn, and proper spacing will become more clear as you progress. Here is a simple suggestion to help you learn proper spacing:

The space between any two characters, such as E and I, equals 3 units. A dit is 1 unit, a dah 3 units. Therefore the space between E and I, or any characters, will equal the time required to send 1 dah or 3 dits.

The space between words is 5 to 7 units, or dits.

T dah dah dah dah dah dah dah dah
T T T T T T T T

The second group of characters you will learn are the dah letters, T, M, and O. Begin with a string of T's, keeping the spacing equal between them. Repeat until you are familiar with the sound of the character T.

M dahdah dahdah dahdah dahdah dahdah
M M M M M

The M consists of 2 dahs in quick succession with no space between. Thus M is dahdah, not dah dah. The dahs are the same length; do not accent either one. This is true with all characters of any combination.

Now repeat the exercise, as you did with the T.

O dahdahdah dahdahdah dahdahdah dahdahdah
O O O O

The letter O consists of 3 dahs--dahdahdah. Keep them uniform, with no space between. However, don't forget to space between letters. Repeat the exercise as before.

Exercise One

Now try the following exercise, watching construction of the letters, the spacing between them, and the spacing between words:

Tom dah dahdahdah dahdah

Motto dahdah dahdahdah dah dah dahdahdah

To dah dahdahdah

Mot dahdah dahdahdah dah

Tot dah dahdahdah dah

Otto dahdahdah dah dah dahdahdah

Using all the letters which you have now learned, make other words of them. Send them over and over for practice. If you are practicing with someone, divide the time with him for sending and receiving. You should both insist on proper construction and spacing, observing all previous suggestions.

Exercise Two

is it to he oh so his tie hit

see she tee sis tom tot tee sit

time set met miss home some hose

mess those moose sheet meets shims messes

Exercise Three

She misses the home

He met Miss Smith

The tot shot moose

A ditdah ditdah ditdah ditdah ditdah
A A A A A

The A is made up of a dit and a dah, with no space between the 2 elements. Thus A is ditdah. Make it smoothly. Keep the length of both the dit and dah correct, not too long for the dit or too short for the dah. Follow the procedure you've learned for speed and spacing.

N dahdit dahdit dahdit dahdit dahdit
N N N N N

The letter N is dahdit. Practice a few as you did with the A.

D dahditdit dahditdit dahditdit dahditdit
D D D D

The D is dahditdit, without spacing. Key it smoothly, so that there is no pause between the elements.

U ditditdah ditditdah ditditdah ditditdah
U U U U

The U is ditditdah.

Exercise One

Don't undertake this exercise until you have learned the previous lesson thoroughly. The first word is "not." Transmit it like this:

dahdit dahdahdah dah

Practice the following words, observing uniform spacing:

not man dim to and due the

sat dot men mat had nut hot

hut see ate mist shoe done main

dies moon dude unit shut moan dust

man note steam taste moose union house

shoes mouse sound soda deeds

Exercise Two

If you have learned the above well, begin practicing sentences. Here's an example:

The man has shoes on.

dah ditditditdit dit dahdah ditdah dahdit

ditditditdit ditdah ditditdit

ditditdit ditditditdit dahdahdah dit ditditdit

dahdahdah dahdit

Try these:

It is a dude home

The man died in the hot steam

The mouse did not mean in the house

The dust and mist dim the moon as a mat

LESSON III

If you are visualizing dits and dahs instead of learning to recognize characters by sound, something is wrong, and you must correct it before you proceed. Use every spare moment to sound different letters, as you see them in newspapers, on sign boards, in letters, wherever you may be. Say them aloud if possible, otherwise in a whisper. Hundreds have used this practice to increase their sound proficiency, and it is effective.

Regular practice is important provided you develop correct habits. It is more important to practice regularly than for long periods. You will accomplish much more in 15 minutes of concentrated practice each evening than in 2 hours' practice once a week.

Accuracy is more important than speed. Don't become discouraged if you fail to gain speed. This will be attained later through practice and familiarization. Eventually you will be able to recognize words and phrases by sound, much as a child recognizes the words "mother" and "father."

W ditdahdah ditdahdah ditdahdah ditdahdah
W W W W

The character W is formed with a dit and 2 dahs in quick succession. Practice as before:

G dahdahdit dahdahdit dahdahdit dahdahdit
G G G G

The G is dahdahdit, exactly the reverse of W.

V ditditditdah ditditditdah ditditditdah
V V V

The letter V is ditditditdah--3 dits and 1 dah. Say it aloud before you key it, smoothly

and without stuttering. Now imitate the vocal sound on the key, ditditditdah. Practice as before.

B dahditditdit dahditditdit dahditditdit
B B B

The B is dahditditdit. Keep your spacing uniform between characters.

Exercise One

Practice the following words, observing spacing. Don't attempt to gain speed yet, but seek accuracy.

beg wag visit basin gown bead wagon
edge bug vague gun women waste bath
vain west baton dug vat good
vacuum base weeds baste wean van

Exercise Two

When you have mastered these words, practice the following sentences.

A wagon van moves on

A woman has the gun now

It is a bad thing to waste good shoes

The gown has beads on it and is in vogue

A visit to the dentist in time saves teeth

He wants to bathe now so get out with haste

Characters of Similar Sound

You may experience difficulty at first in distinguishing between certain characters similar to others. These may be the so-called opposites, such as W and G, B and V, and A and N, or they may be letters like S and H.

If you find that you have this trouble, especially in receiving practice, make up a number of words in which they both appear. Have someone send them to you over and over again until you can identify each character by its sound. Constant practice will overcome this difficulty.

Continue this exercise until you can both send and receive such characters at slow speed, and without hesitation.

Slow speed is not more than 5 words per minute. You are sending at that rate if, in the following exercise, you send the group from "an" through "tm" in 1 minute.

an na du ud gw wg bv vb mt tm sh he is ei
om mo to ot bd db vu uv si is vs sv aw wa

LESSON IV

If you have carefully followed instructions, developed good habits, and are thoroughly familiar with the sounds of all characters covered so far, you have taken a big step in learning the code properly. The remaining characters should be less difficult. Practice now as you have in previous lessons.

R ditdahdit ditdahdit ditdahdit ditdahdit
R R R R

K dahditdah dahditdah dahditdah dahditdah
K K K K

Repeat K several times vocally before you begin keying it. This will help you to keep it smooth.

Now practice these two characters together.

ditdahdit dahditdah ditdahdit dahditdah
R K R K

F ditditdahdit ditditdahdit ditditdahdit
F F F

The F is ditditdahdit. Sound it vocally before you key it. Keep it smooth. Then key it.

L ditdahditdit ditdahditdit ditdahditdit
L L L

The L is ditdahditdit. Practice vocally first as you did with F, then key it.

Now practice F and L together:

ditditdahdit ditdahditdit ditditdahdit
F L F

Exercise One

Practice the following words:

if of are vale other took leaf baffle left
felt feel else girl kill roll fun four know
waft roof rook from great laughter three
length word war learn long error effort list
more letter make before all forest seek fake
last value duke urge run take

Exercise Two

Practice these sentences after you have learned the words thoroughly:

All of us make errors
His wife is an invalid
The car killed the rabbit
Be sure to sound the letters
It takes time to run down there

LESSON V

Exercise One

Concentrate on the following letter groups and words, sounding and keying each group several times before passing to the next.

sh na du wg vb fl rk mo ei gw if bv ud sh bd
aw uv am si if go ve kr na tm om fu rl in uf
aw am uv kr if et ud an gw fl rk di awv abd
tmo eis nko auf abd rdf uvw adu shi tuv eau
tnd ubd ina gwo awk lfu drb dub ish flr gwa
adn frg lkg flag wagon rook verb unveil
nation left bovine hash governor rake their

been frog dubbed milker duke elf bladder left
sight kind series house alarm bank strike
hasten wags leaf then stove killer daub most

J ditdahdahdah ditdahdahdah ditdahdahdah
J J J

The J is ditdahdahdah. Practice it as before; first vocally, then with the key.

P ditdahdahdit ditdahdahdit ditdahdahdit
P P P

The P is ditdahdahdit. Practice it vocally, first. Avoid any pause that might make it sound like ditdah dahdit or ditdahdah dit. Now key it.

X dahditditdah dahditditdah dahditditdah
X X X

The X is dahditditdah. Make it smoothly so that the sound produced is not identified as na or tu, or a similar combination. If you construct a letter incorrectly to begin with and do not correct the mistake, you have acquired a bad habit, difficult to break.

Z dahdahditdit dahdahditdit dahdahditdit
Z Z Z

The Z is dahdahditdit. Use the same care in keying the Z as you did with the others. Unless you do, you will be making ge, td, or mi.

Exercise Two

Practice the following words, a few at a time until you have mastered them:

job pix zero pan jazz rex apart extra flap

sox jell post john pill jessie taxes top join

expert lamp power james axe zipper nap zip

ax xz pg lp wp gz dx jp zm rp pl jw mi wj we

tu eo td pl na ge xp eg dt am aj xd zx pj zd
xu zg eo an td px

Exercise Three

Jessie James was an expert shot

The zipper snap fails to work

John has a job in a jazz band

The power of the press was upheld

Safety is the responsibility of all

LESSON VI

You should now realize the importance of proper construction and spacing of letters and words. If you have developed any bad habits which tend to confuse certain letters, attempt to correct them before you proceed.

Exercise One

In this exercise pay particular attention to proper formation of the letters and spacing between letters and words. Take turns sending and receiving the following sentences:

It is important that the sound of all signals be learned right

Memorize the sound, not the dits and dahs, keeping the sound of the letters in mind at all times

Extra moments spent in drilling with letters that give trouble are worthwhile

Making up words that have letters of similar sound in them is one of the best forms of drill

C dahditdahdit dahditdahdit dahditdahdit
C C C

The C is dahditdahdit. Practice sending it, vocally and by key.

Y dahditdahdah dahditdahdah dahditdahdah
Y Y Y

The Y is dahditdahdah. Practice as before.

Q dahdahditdah dahdahditdah dahdahditdah
 Q Q Q

The Q is dahdahditdah. Do not make it ma or gt, or tk.

Exercise Two

quick check yellow young clique occur
 question such come quell space quart practice
 quack queen yacht celery quarry factory color
 sequence

The check was for a yellow yacht of question-
 able ownership. There was a quarry located
 near the occupied zone. Young Queen Mary
 quickly qualified as an authority. Twenty
 mayors determined the connections necessary.
 Conning towers are the main exit on sub-
 marines.

Exercise Three

ma kt gt nm tw nm tr ke cq yq cy
 maq kty qtg tky nmy twy nnc trc kec cnn ytw
 qma tem met tta ten nte tat ntt tat tae cya
 gay gym ona maa cnc qmt ykt nny ckt qcy two
 gtq ywa qaa fly udq she gyw yna uvq kqr dbc
 lfq vby sic flc shyq lfyc krqc dqby vyqb
 wqgc yqck isgy hack fqly cudy cgwc

Exercise Four

yet flay satisfy quay quickly censor
 difficult proceed ticket annoying condole
 shipwreck yesterday they tenstrike made
 twofold nonsense nite flyer meter cinema
 traffic twice kept tempt sick coming running

playing truce maiden train manner mayor
 employer

LESSON VII

Faithful, regular practice with the preced-
 ing exercises should have done much to help
 you become proficient at making the sounds
 of the entire alphabet in code. From this
 point, make every effort to perfect your send-
 ing. Remember: Practice daily, even if you
 can devote only 15 minutes to it.

Exercise One

Take turns sending and receiving the follow-
 ing words, smoothly and accurately:

on it as by so he at do to go my or an of we
 say gaf has but had be the any and who very
 axe zero too man may out our all fag what
 this were often gave said send made take are
 what them bud wag beg should after part soon
 time will those sort right she tom must some
 that war dug then edge need bats bead else
 run take fill tired ball begin attend gem
 past deal tired value zipper sizzle truce
 get delay you play cannot limit pane laid
 feel fake left vale into great twenty club
 today axis how make run axe poor ape seek
 shell effort forest error took dabbed flute
 rail verb their stove wagon rake jazz james
 pill sex japan extra jell flap quick quart
 yellow come code with take queen use not
 want them wish game get firm butter name
 mass did jest deal stay dumb wage tired
 weep extra boy due self easy

NUMERALS

Before beginning the practice of numerals, spend some time sounding and keying a series of dits and dahs, keeping them uniform and properly spaced. This will help you to construct the combinations, and you will not be making a number of letters from a group of sound units intended for a numeral.

First, make dits--at least 100 of them--with just a little space. Watch your timing so that they sound as if they were being made by a machine. Then gradually shorten the space, or pause, between dits until practically no space exists. Make them in groups of 25, slowly at first, speeding up as you progress.

Repeat the same procedure with dahs.

Taking 2 numerals at a time, use the same tactics as described previously, watching your spacing particularly. Learn the sound; forget the appearance.

NUMBER 1 IS ditdahdahdahdah.

NUMBER 9 IS dahdahdahdahdit.

Exercise Two

As soon as you've learned to distinguish these, practice the following exercise:

1 1 1 1 1 1 1
19 19 19 19 19 19 19
191 191 191 191 191 191 191 191 191

9 9 9 9 9 9 9 9 9
91 91 91 91 91 91 91 91 91
919 919 919 919 919 919 919 919 919

NUMBER 2 IS ditditdahdahdah.

NUMBER 8 IS dahdahdahditdit.

Exercise Three

As soon as you've learned these, practice as in the previous lesson:

2 2 2 2 2 2 2 2
28 28 28 28 28 28 28 28
282 282 282 282 282 282 282 282 282

8 8 8 8 8 8 8 8
82 82 82 82 82 82 82 82
828 828 828 828 828 828 828 828 828

NUMBER 3 IS ditditditdahdah.

NUMBER 7 IS dahdahditditdit.

3 3 3 3 3 3 3 3 3 3
37 37 37 37 37 37 37 37 37 37
373 373 373 373 373 373 373 373 373 373

7 7 7 7 7 7 7 7 7 7
73 73 73 73 73 73 73 73 73 73
737 737 737 737 737 737 737 737 737 737

NUMBER 4 IS ditditditditdah.

NUMBER 6 IS dahditditditdit.

Exercise Four

4 4 4 4 4 4 4 4 4
46 46 46 46 46 46 46 46 46
464 464 464 464 464 464 464 464 464

6 6 6 6 6 6 6 6 6
64 64 64 64 64 64 64 64 64
646 646 646 646 646 646 646 646 646

NUMBER 5 IS ditditditditdit.

ZERO IS dahdahdahdahdah.

5 5 5 5 5 5 5 5 5
50 50 50 50 50 50 50 50 50
505 505 505 505 505 505 505 505 505

0 0 0 0 0 0 0 0 0
05 05 05 05 05 05 05 05 05
050 050 050 050 050 050 050 050 050

Exercise Five

B6 1j 5H V4 3V Z7 Z8 6TH 7MS SM3 7MS
018 HT4 HE5 198 796 143 210 865 431
237 374 982 101 3427 8769 1976 4315
2135 4632 9061 4036 7849 3129 3142
3124 12345 68594 01342 52964 89413
29473 89541 10311 19735 59302 12438
04173

LESSON VIII

It is a mistake to assume that it is easier to send good code than to receive. Anyone can manipulate the key after a fashion, but it takes faithful practice to learn to send good, readable code. You must make characters correctly and spaces must be uniform if the receiver is to get them correctly.

You have practice transmitting and receiving by key. Even without these, however, it is possible to attain a certain degree of proficiency. You can repeat characters verbally, and where you have a practicing partner you can receive while he transmits in this manner.

Although such practice is valuable to you as a student, sooner or later it is necessary for you to obtain actual practice on a key.

REVIEW

Turn back to the first code lesson given you in this manual. Using the key, start with the first lesson and practice sending. Follow the instructions given for every character and continue this practice through all lessons to the present one. Be sure to follow instructions in Lesson I on adjustment and proper position of the hand on the key. EXERCISE: When you have mastered each character so that you can send it evenly and with correct timing, concentrate on the following exercise:

E I S H 5	T M O Ø*	A U V 3
A W J I	N D B 6	M G Z*7
N K C Y	M G Q	U F 2
A R L	A W P	D X
H 4	*1 2 3 4	6 7 8 9

*The numeral zero is printed Ø to distinguish it from the letter O; the numeral 1 is printed 1 to distinguish it from the printed i, and Z is z to distinguish it from the numeral 2.

PUNCTUATION MARKS

Now, you must add a few punctuation marks to your code vocabulary. The following are in common use and you should learn them well. Sound them over as you did the characters:

The period	(.) ditdahditdahditdah
The comma	(,) dahdahditdahdahdah

The question mark (?)	ditditdahdahditdit
The fraction bar (/)	dahditditdahdit
Separation sign	ditdahditditdah

Note: The fraction bar is transmitted between the numerator and denominator of a fraction

Example: 2 1/2.

The separation sign is transmitted between a whole number and a fraction and indicates that a fraction is about to be sent. Example: The mixed number 24 1/2 is transmitted:

ditditdahdahdah ditditditditdah
ditdahditditdah ditdahdahdahdah
dahditditdahdit ditditdahdahdah
ditdahditdahditdah

Exercise: Practice the following sentences, transmitting punctuation marks:

Who is it?

Maps, documents, photographs, and zebras are available.

We have 36 1/2 dozen message blanks on hand.

He commands an army of 2,500,000 men.

LESSON IX

Pilots forced down at sea today carry flashlights and metal mirrors as part of their necessary equipment. The reason precious space is taken up with such items is that pilots consider signal equipment almost as important as water in their battle to live.

Without means of communication, their chance of survival is slim.

The mirrors are used when the sun is shining to signal possible rescue aircraft and boats.

The flashlights can be used at night to transmit the always familiar S.O.S.

You have learned the code. If possible, rig up a blinker, and practice sending. You will operate the key in the same way, but you naturally must do it at a considerably slower rate.

REFERENCE

FM 1-45 Signal Communication
FM 24-18 Radio Communication

PHYSICAL FITNESS

The best airplane in the world is only as good as the man who flies it. His strength, speed, power, and endurance, must be commensurate with that of his ship. He must be able to fly at high altitudes and for long hours. Carefully selected physical exercises are responsible to a large degree for the superb condition of American airmen today. Their strengthened abdominal muscles increase their ability to avoid blacking out. Their trained hearts supply more blood and oxygen to the tissues than untrained hearts when they are subjected to physical stress or when there is a lower percentage of oxygen in the air.

Physical fitness is equally important in commercial and CAP flying. Relaxation, essential to efficient airplane operation, is a natural consequence of the well conditioned body and clear mind.

Take proper exercise. Get plenty of sleep. Eat sufficient nutritious food. Avoid eating too much between meals or prior to flight.

Peak mental and physical condition make for alertness. Regular participation in a sensible, well planned program of physical education is one of the most important ways to achieve such fitness. The calisthenics, and group games, described in this section will help improve your physical strength and endurance.

Swimming and Running

These activities are among the best of all conditioning exercises, and are as valuable to girls as they are to men. Include some running in the physical training program at least every other day. This may include dashes, relays, cross country, or obstacle course running.

Swimming is a most important and valuable sport. It brings into use more muscles than any other activity.

Swimming is particularly valuable to all pilots because of the training it gives them for meeting emergencies, such as bailing out over water and ditching. In practicing swimming, you should master these objectives:

1. Stay afloat.
2. Swim under water.
3. Swim long distances without exhaustion.
4. Enter the water feet first without submerging.
5. Be at home in the water fully clothed.
6. Undress in deep water.
7. Render assistance to another person in the water.

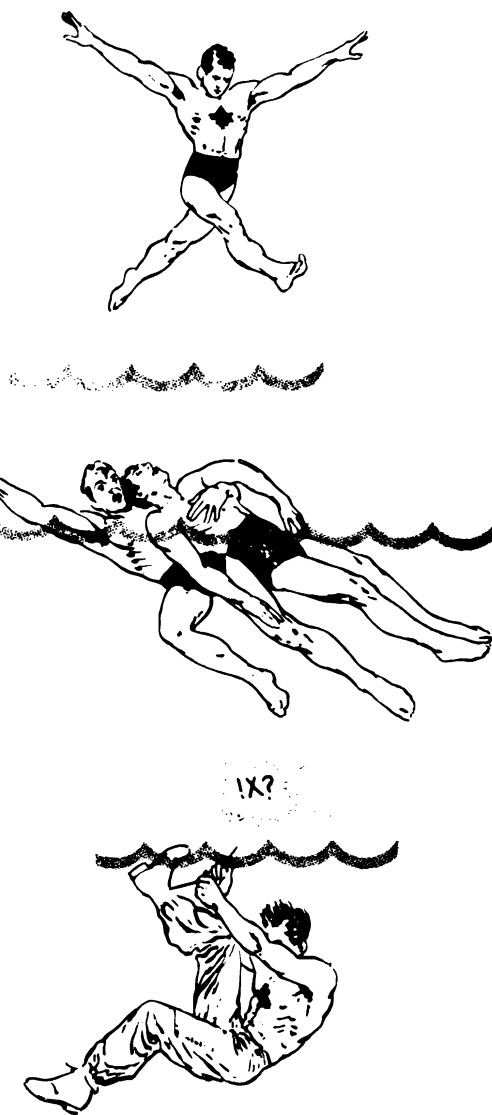


Figure 7-64.--Top: Entering water without submerging. Middle: Assisting swimmer in distress. Bottom: Disrobing in deep water.

For this purpose you should learn and use the Red Cross life-saving methods.

Group Games

You have been brought up with a great tradition of competitive sport. You have participated in some form or other of athletics. By so doing you have learned how to use your body and your mind--and most important of all--to be able to use them together.

Group athletics stimulate teamwork and a competitive spirit as well as provide a pleasant form of recreation. These games may include volleyball, dodgeball, basketball,

softball, touch football, soccer, speedball, and human tug-of-war. Every CAP cadet should learn to excel in at least 2 of these sports.

Exercises

(A) Push-up

(a) Position--Front leaning rest.

(b) Movement--16 to 40 times in medium cadence.

1. Bend elbows, and touch chest to ground, keeping body straight.

2. Straighten elbows raising body in straight line.

3-4. Repeat 1 and 2.

(B) Eight Count Push-up

(a) Position--Attention.

(b) Movement--10 to 20 times in medium cadence.

1. Full squat, placing hands on ground in front of feet, shoulder width apart.

2. Thrust feet and legs back to front leaning rest position.

3. Touch chest to ground.

4. Return to front leaning rest.

5. Touch chest to ground.

6. Return to front leaning rest.

7. Return to squat rest.

8. Starting position.

(C) Mountain Climber

(a) Position--Squatting position with right leg extended to the rear and left leg drawn up against chest.

(b) Movement--16 to 40 times in medium cadence.

1. Extend left foot back to rear and bring right leg up under chin.

2. Return to starting position.

3-4. Repeat 1 and 2.

(D) The Bridge

(a) Position--From a bridge position with arms extended backward and legs extended forward with feet flat on ground, raise up until body weight is borne entirely upon hands and feet.

(b) Movement--20 to 30 times in medium cadence.

1. Arch the back by thrusting the waist upward and the head backward.

2. Return to the starting position.

3-4. Repeat 1 and 2.

(E) Back Twist

(a) Position--Lie on back, arms extended sideward, palms down, legs raised to a right angle with feet together, knees straight.

(b) Movement--20 to 30 times in variable cadence, slowly at first, then increasing tempo to as fast as the group can do it together without being thrown out of position by the momentum of the legs.

1. Swing legs vigorously to left, touching ground on left side in vicinity of left hand.

2. Return to starting position.

3. Swing vigorously to right, touching ground on right side in vicinity of right hand.

4. Return to starting position.

(F) Sit-up

(a) Position--Lie on back, feet apart side-ward about 2 feet, arms extended over head.

(b) Movement--20 to 40 times in slow cadence.

1. Thrust arms forward and touch toes, knees straight.

2. Lie back to original position.

3. Raise legs, swinging them overhead, keep knees straight, touching toes to ground behind head.

4. Lower legs to starting position, slowly.

(G) Rowing Exercise

(a) Position--Lie on back, arms extended over head, legs straight.

(b) Movement--20 to 40 times in slow cadence.

1. Sit up and at the same time bend knees sharply. Lean forward, thrusting or swinging arms forward to a rowing position with knees against chest, feet flat on ground and arms forward. (Arms should be on the outside of knees.)

2. Return to starting position.

3-4. Repeat 1 and 2.

(H) Stationary Run

(a) Position--Standing with arms in running position.

(b) Movement--Stationary run. Begin slowly and run about 20 double steps (counting only on left foot). Speed up somewhat for another 20 steps, raising knees to height of hips; then run 20 to 40 steps at full speed, raising knees hard; then slow for 20 steps more.

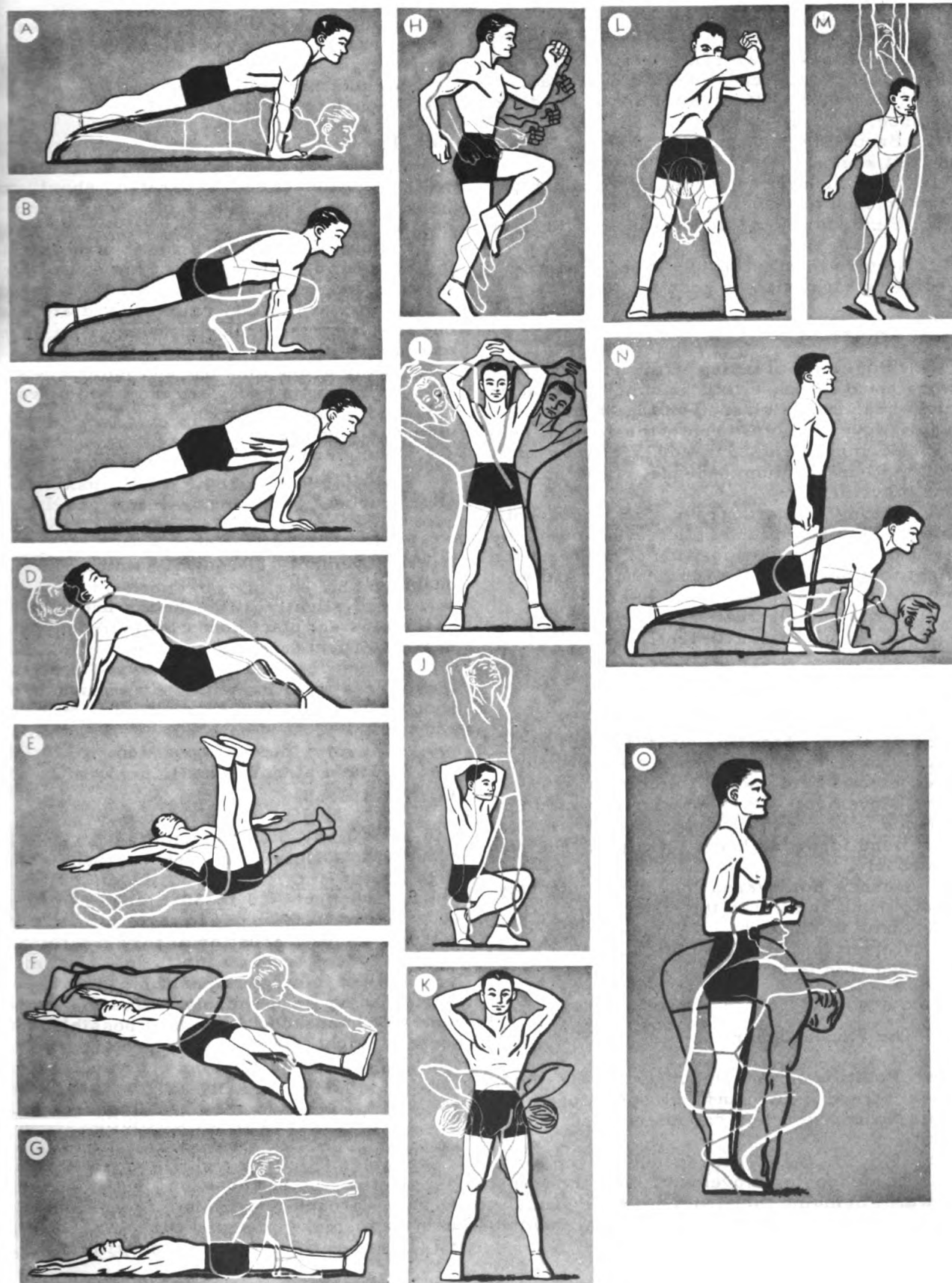


Figure 7-65.--Calisthenics. Original from
UNIVERSITY OF CALIFORNIA

(I) Side Bender

(a) Position--Standing with feet apart about 2-1/2 feet, hands clasped overhead.

(b) Movement--20 to 30 times in medium cadence.

1. Bend sideward sharply to the left, bending left knee.

2. Bend sideward left, bending quickly and farther each time.

3. Bend sideward left, bending quickly and farther each time.

4. Return to starting position. Same exercise on right side on counts 5, 6, 7, 8.

(J) Squat Jump

(a) Position--Standing with left foot forward about 8 inches, full knee bend, squat on right heel, hands clasped on top of head.

(b) Movement--Alternate the feet. Begin with 15 movements and add 5 a week until doing 50 in medium cadence. (One jump is one movement.)

1. Spring upward from this squat until knees are straight and both feet have left the ground. Change the position of the feet, the right foot becoming the forward foot and vice versa. Drop to squat on left heel.

2. Jump and alternate feet.

3. Jump and alternate feet.

4. Jump and alternate feet.

(K) Trunk Twister

(a) Position--Standing with feet apart sideward about 2 feet, with hands clasped behind head, elbows held backward, chin in.

(b) Movement--20 to 40 times in medium cadence.

1. Bend forward, knees straight. Do this vigorously.

2. Bounce downward, but simultaneously rotate trunk sharply to the left.

3. Same to the right.

4. Return to original position, pulling head back and chin in strongly.

(L) The Woodchopper

(a) Position--Feet about two feet apart, trunk turned left, hands clasped together, arms thrust over left shoulder, head facing front.

(b) Movement--20 four-count movements.

1. In a chopping movement, bend the trunk forward, bringing the arms down vigorously between legs. Extend arms as far behind legs as possible.

2. Raise the trunk and assume the same position as in starting position but with trunk turned right and hands over right shoulder.

3. Repeat first movement.

4. Return to starting position.

(M) The High Jumper

(a) Position--Feet separated about one foot, knees slightly bent, arms raised backwards.

(b) Movement--Swing arms as in the standing high jump, with a jump at the end of each forward and each backward swing. On each second forward swing, jump upward at least one foot from the ground. Swing arms hard and jump with vigor. 12 to 25 times.

1. Swing arms forward and jump upward.

2. Swing arms backward and jump upward.

3. Swing arms forward and over head vigorously and leap upward at least one foot.

4. Swing arms backward and jump upward.

(N) "Burpee"

(a) Position--Attention.

(b) Movement--30 to 50 times in slow cadence.

1. Bend slightly at the knees and sharply at the hips and place hands on floor or ground in front of feet in squat position.

2. Thrust feet and legs backward to a front leaning rest position with body straight from shoulders to feet, weight supported on hands and toes.

3. Return to the squat position.

4. Resume standing position.

(O) Squat Bender

(a) Position--Standing with feet slightly separated and elbows bent, with fists at shoulders.

(b) Movement--20 to 30 times in medium cadence.

1. Full squat, thrust arms forward, fingers extended, keep trunk erect.

2. Return to original position.

3. Bend forward sharply, thrusting downward with hands touching toes if possible, with knees straight.

4. Return to position.

SUBSTITUTE EXERCISES

Exercises (E), (F), and (G) require you to assume the supine position on the ground. Because ground conditions are frequently such as to make this undesirable, (C), (D), and (L) are recommended as substitutes.

REFERENCE

TM 21-220 Sports and Games.

FM 21-20 Physical Training.
FM 35-20 Physical Training (Women).

FIRST AID

ADVICE TO THE CIVIL AIR PATROL
FIRST AID WORKER

First aid is the immediate temporary care given by a trained person in case of accident or sudden illness before medical aid is available. It is given in order to prevent death or further injury, to relieve pain and counteract shock. To become expert in first aid requires many hours of training and practice.

General Directions

1. Keep the victim lying down.
2. Give immediate attention to serious bleeding and asphyxia.
3. Examine for injuries not clearly seen.
4. Keep victim warm.
5. Fill out identification tag at once.
6. Make injured comfortable.
7. Keep the crowd away.
8. See that someone calls a doctor.
9. Do not give an unconscious person anything to drink.
10. Do not permit casualty to be moved unless it is necessary and until it is safe.
11. When a casualty has several injuries, treat the most serious first, especially if it involves severe bleeding.
12. Remember you are a first aid worker and not a physician.

THE CARE OF WOUNDS

The chief dangers of wounds are severe bleeding, the introduction of infection and the development of shock. Bleeding should be controlled at once, for profuse bleeding may be followed by shock or result in lowered resistance to infection. Serious infections frequently develop in neglected wounds. All wounds should, therefore, be treated by a physician.

Make no attempt to clean or wash the wound. Do not apply any antiseptic, disinfectant, or any other material such as ointments, salves, oils, or chemicals. Simply cover the wound with sterile gauze, fix it in place with bandage or adhesive plaster, and take the injured person to the doctor. The gauze used must be large enough to cover the wound and a margin of skin on all sides. It must be sterile, and therefore should be from a freshly opened package. The surface of the gauze to

be placed against the wound must not touch anything before it is applied. Do not lift the dressing or slide it about after application.

Casualties with serious injuries must be transported by stretcher to a first aid post or sent by a doctor directly to a hospital by ambulance. Because injuries may appear minor on the surface but be severe in the depth, you should not permit an injured person to go home until he has been seen by a doctor.

CARE OF WOUNDS IN SPECIAL
LOCATIONS

Head Injuries

Shock is usually present in cases of head injury. The injured person may be dazed and often resists efforts to help him. He may tear off bandages or clutch at the first aider as he tries to treat him.

In any case of head injury the brain may be damaged. The skull may be fractured. If this has occurred, blood stained fluid may leak from the ears.

If the casualty is dazed or unconscious and there is no obvious injury, examine the head first. Look for bruises or bumps. Even persons with slight or doubtful head injuries must be seen by a physician as soon as possible.

First aid.--If there is a wound of the scalp apply a sterile compress to the wound and hold it in place with a firmly applied bandage. If there is bloody or watery discharge from the ears do not plug them with cotton and do not try to clean them. Simply apply a sterile dressing over the ears. Keep the victim warm and quiet. Keep him lying down with his head slightly elevated. Fill out identification tag promptly, for the victim may lose consciousness. Transport to the hospital on a stretcher.

Internal Injury

Serious injury may occur in the abdomen or in the chest as a result of penetration by a missile or crushing. Penetrating wounds about the hip joint or buttocks often cause internal injuries. Internal injury is always accompanied by internal bleeding and shock. The casualty may tear at his clothing in an

effort to get more air. He may complain of thirst. If the wound is in the chest he may cough up blood.

First aid.--Treat for shock, which is always present. Keep the victim warm. Never give anything to drink. If the injury is in the abdomen keep the victim lying down, but if it is in his chest prop up the head and shoulders. All cases of internal injury must be transported on stretchers to a hospital as soon as possible. A casualty suffering from chest injuries should be propped up on the stretcher in a semisitting position, leaning toward the injured side. A casualty suffering from an abdominal injury should be transported on his back with legs slightly bent at the knees. No attempt should be made to replace protruding organs. Call a doctor.

Injury to the Face

Probably no injury is so terrifying as an injury to the face. When facial expression is lost the casualty appears to lose his identity as a human being. Bleeding is often profuse. Blood may run into the mouth or nose and strangle the victim. The jaw may be broken, in which case the tongue tends to fall backwards and obstruct the air passages.

In treating victims with facial injuries the first aid worker would do well to remember the miracles accomplished through plastic surgery. Although facial injuries are very gruesome, they are not the most dangerous to life.

First aid.--Determine whether the tongue has fallen into the back of the throat. If it has, grasp it in the fingers and pull it forward. Turn the victim onto his abdomen so that the blood will not run into his nose or mouth. Apply a liberal number of sterile gauze dressings to the wound and bind in place with a triangle bandage. If the tongue falls backwards pull it forward and apply a bandage to the chin.

DRESSINGS AND BANDAGES

One of the most satisfactory dressings for wounds is the bandage compress. It is a piece of gauze attached to the center of a strip of bandage. The compress is to be opened without touching the inside, placed over the wound, and bound in place by the bandage tails.

When a bandage compress is not available, use a sterile gauze pad of suitable size and thickness and bind in place with bandage or short strips of adhesive plaster. In emergency work, triangle bandages are useful for

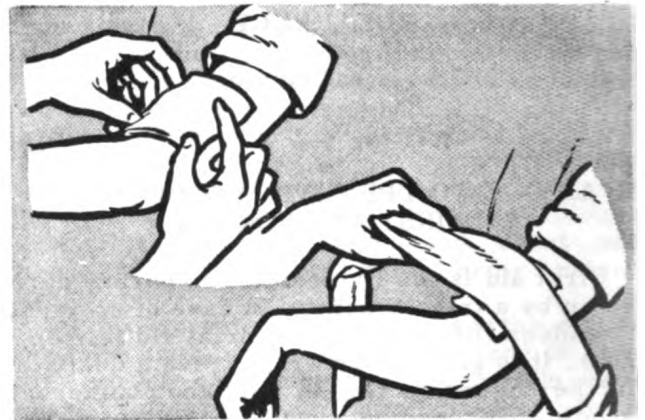


Figure 7-66.--Bandage Compress.

this purpose. They can be improvised from many materials. They will hold a piece of gauze in place and keep out dirt and contamination. These are intended as emergency dressings which will be replaced with more permanent dressings by the physician.

Roller bandages are excellent but are difficult to apply properly. A poorly applied roller bandage will not stay in place and will admit dirt.

THE TRIANGLE BANDAGE

The triangle bandage is very useful in first aid. It may be used to keep splints or dressings in position, as a sling to support an injured part or as a tourniquet.

It may be used: 1. As an open triangle spread out to its full extent. 2. As a wide folded bandage (wide cravat). Fold the wide cravat bandage once again, long edge to long edge, and tie with a square knot.

Slings

The large arm sling is used to support the forearm and hand. Spread out a triangle bandage on the front of the casualty with the point toward the injured arm. Pass the upper end around the back of the neck from the

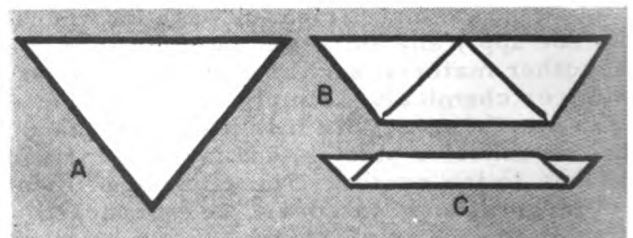


Figure 7-67.--A Triangle Bandage.

sound side so that it appears over the shoulder of the injured side. Carry the point behind the elbow of the injured arm; place the forearm across the middle of the bandage. Then carry the lower end up around the arm and tie to the upper end with a square knot to prevent slippage. Bring the point forward around the elbow and pin to the front of the sling.

Slings may be improvised (1) by pinning a coat sleeve to the front of the coat, (2) by turning up the lower edge of a coat and pinning it to the front of the coat, or (3) by passing the hand inside the coat and then buttoning it.

Bandaging Special Parts of the Body

Chin and side of face.--Put the center of a cravat under the chin. Pass one end over the top of the head to the temple on the opposite side. Bring the other end to the temple, cross the bandage ends so that they go around the head in opposite directions. Tie at the side.

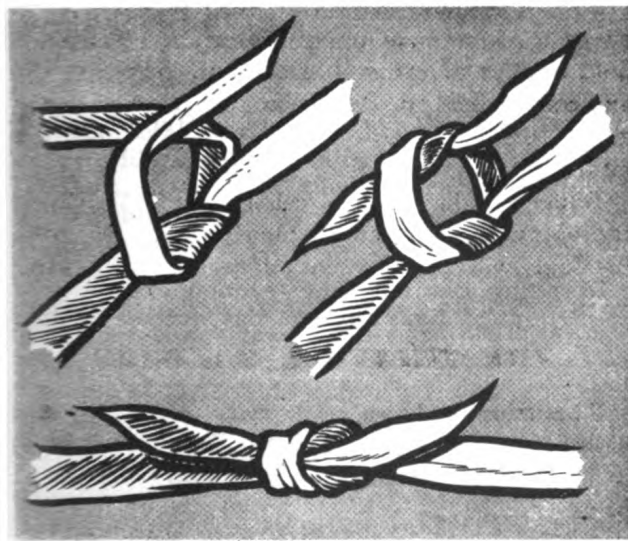


Figure 7-68.--How to tie a square knot.

Both eyes.--Put the center of a wide cravat bandage over the eyes as a blindfold, carry the ends backward, cross behind the head and tie at the side. Never cover an eye affected by gas.

Neck.--Put the center of a cravat bandage over the dressing, cross the ends in back, and tie over the dressing.

Abdomen.--Put the center of a wide cravat bandage over the dressing. Carry the ends around the abdomen in opposite directions and tie at the side.



Figure 7-69.--Bandaging the Chin.

The hip.--Pass a cravat bandage around the waist and tie in front. Then take an unfolded triangle bandage, put the center over the hip, point upwards, with its long border folded and lying across the thigh. Pass the ends around the thigh and tie on the outer

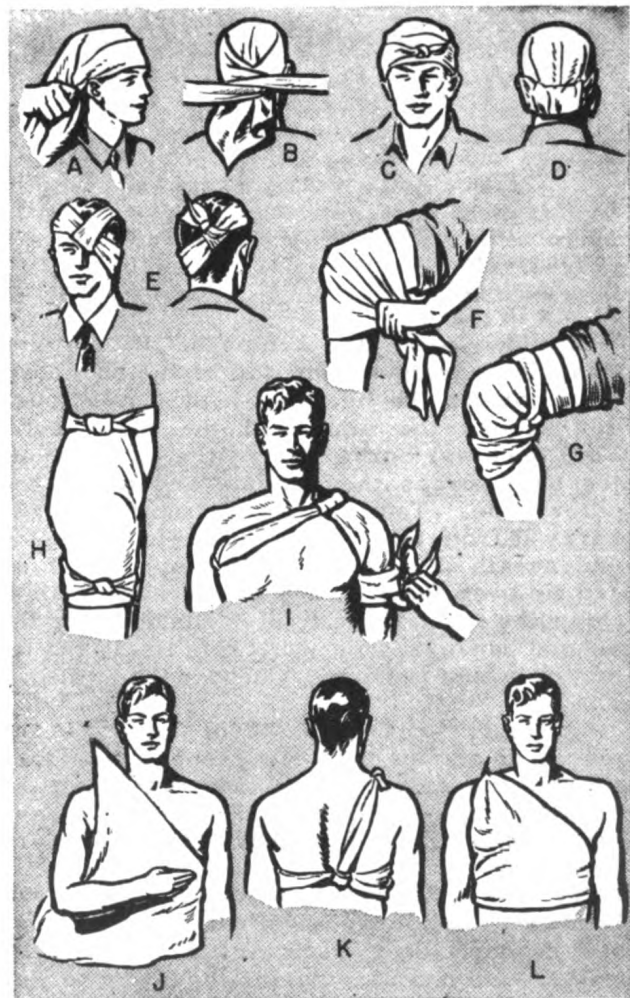


Figure 7-70.--Bandaging the Head (A, B, C and D), eye (E), elbow or knee (F and G), groin (H), shoulder (I), and chest (J, K and L).

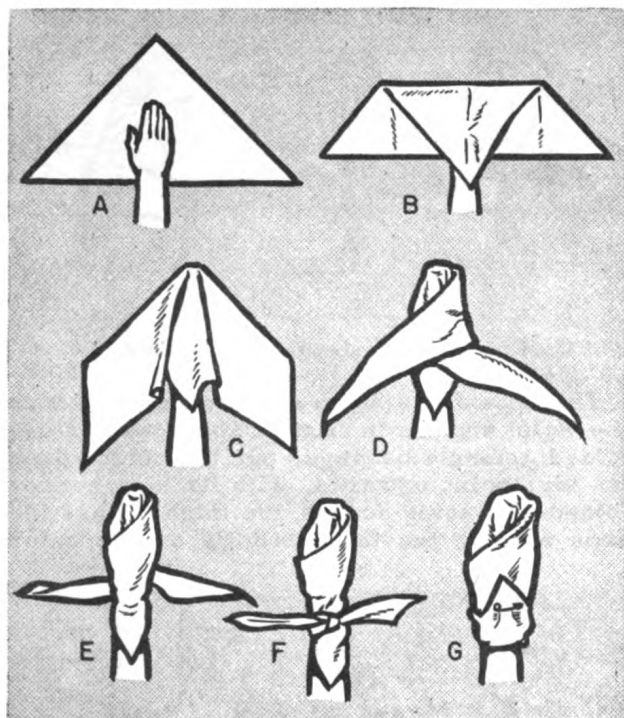


Figure 7-71.--Bandaging the Hand.

side. Draw the point upwards under the bandage around the waist, turn it down over the bandage going around the waist and tie or pin in place.

Shoulder.--Lay the center of an unfolded triangle bandage on the top of the shoulder, point toward the head, with the lower border across the middle of the upper arm. Fold the lower border, carry the ends around the arm, cross them inside and tie on the outer side. Take a cravat bandage, and carry it from the shoulder of the injured side underneath the armpit on the opposite side and tie over the shoulder on the injured side. Draw the point of the first bandage under the second bandage, fold it back on itself and tie or pin in this position. Support the arm in a sling.

The foot.--Place the sole of the foot in the center of an unfolded bandage with the toes toward the point. Turn the point over the toes and instep. Take one of the ends in each hand close to the foot, bring them forward and cross them over the instep, covering the point. Draw the point upwards to tighten the bandage, and fold it toward the toes. Carry the bandage ends back around the ankle, cross them behind, catching the lower border of the bandage. Bring the ends forward, cross them again over the instep so as to cover the point, carry one end under the foot and tie on inner side.

Lower part of the abdomen.--Pass a cravat bandage around the waist and tie. Pass the end of a wide cravat bandage under the first at the middle of the back, fold it over and secure it with a safety pin. Bring the other end forward between the thighs and up to the waist bandage in the front. Pass it under the waist bandage and pin or tie.

HEMORRHAGE

Hemorrhage is a condition which sounds looks and is serious. Persons with hemorrhage must have priority treatment and transport.

Although the presence of blood requires immediate attention, it is in itself a poor indicator of the severity of the wounds. A little blood goes a long way and may make a minor injury look frightening. On the other hand, a severe wound, a torn off limb, for example, may bleed very little because of shock.

Many people think the only way to stop bleeding is to apply a tourniquet. They fail to consider its dangers. They would be horrified to know of the number of limbs lost or paralyzed because tourniquets have been left in place without being loosened every 15 minutes.

A pad over the wound and a firm bandage combined with elevation of the limb will stop bleeding in nearly all cases.

Kinds of Bleeding

Bleeding from artery--blood spurts with each beat of heart unless cut artery is deep.

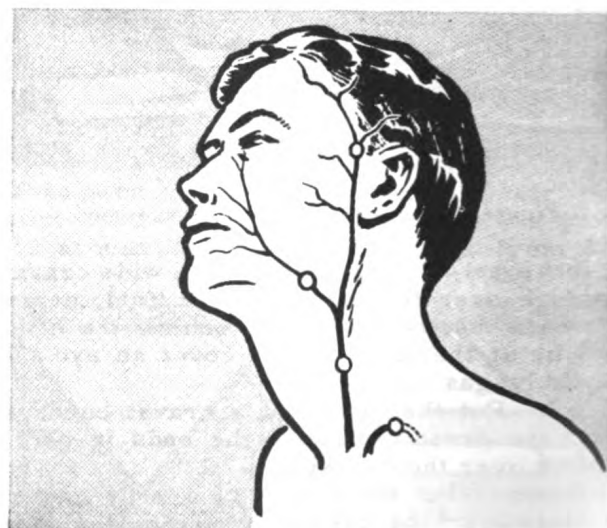


Figure 7-72.--Pressure Points.

under tissues, in which case blood will well up.

Bleeding from veins will be a steady flow.

Bleeding from injury to very small vessels --oozing.

Control of Bleeding

Bleeding from artery.

Pressure points. --Pressure points are points where arteries lie close enough to bones to permit sufficient compression by the fingers to control bleeding. Hemorrhage may be controlled by pressure on these points until pressure dressings can be applied to the bleeding wound.

For bleeding from the scalp and forehead, press with finger or thumb just in front of the opening of the ear on the side nearer the bleeding.

For bleeding from the face below the eye-brows, press against the side of the lower jaw just in front of the angle of the jawbone on the bleeding side.

For bleeding from the neck or cut throat, place finger tips on the neck beside the wind-pipe on the bleeding side, and with thumb behind the neck, press toward backbone with ball of fingers.

For bleeding from the shoulder or armpit, tip the head toward the shoulder on the injured side and press down with thumb at side of neck, just behind the collar bone.

For bleeding from the arm, press with fingers on inner side of the arm just below armpit.

For bleeding from the leg, put victim on his back and press downward with straight arm pressing the heel of the hand into the middle of the groin.

Tourniquet for arterial bleeding: Materials. --A cravat bandage or a strip of cloth at least 2 inches wide folded with enough thicknesses to prevent cutting into skin (never use wire or any similar materials), and a stick about 6 inches long.

Application. Wrap folded cloth twice around arm a hand's breadth below the armpit or around leg a hand's breadth below the groin and tie with single knot. Place stick on knot, secure it with square knot and twist. Make certain the tourniquet stops the bleeding. Prevent stick from untwisting by tying ends of stick to the limb with bandage or handkerchief. Record the time the tourniquet was applied by writing the hour and minute on the tourniquet with a pencil.

Precautions. Loosen tourniquet at end of 15 minutes. If dressing over wound becomes more bloody, tighten tourniquet for another

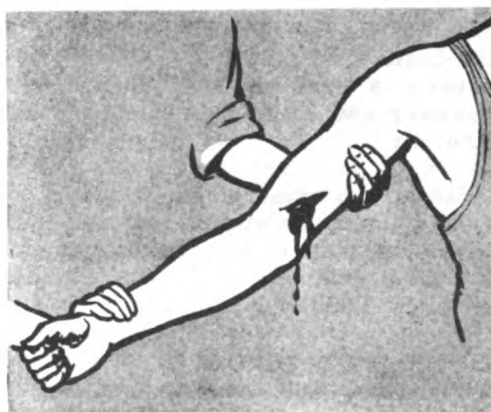


Figure 7-73.--Controlling bleeding from shoulder or armpit.

15 minutes. If dressing does not show new bleeding, leave tourniquet loose, but in place, ready for use if bleeding starts again. Indicate time of loosening and tightening on tourniquet.

Always mark large letters "TK" on victim's forehead with skin pencil to indicate presence of tourniquet, so it may be loosened by those receiving victim.

Never apply a dressing over a tourniquet.

Never transfer responsibility to someone else (nurse, stretcher bearer, ambulance driver) until you make sure he knows a tourniquet has been applied.

If part of a limb has been blown off, tightly apply a tourniquet close to the end of the stump and do not remove it.

Bleeding from veins.

Elevate a bleeding arm or leg unless it is fractured.

Apply sterile dressing over the wound and tie firmly in place. Remember not to touch surface of gauze to be placed over wound. If no sterile dressing is at hand, use cleanest

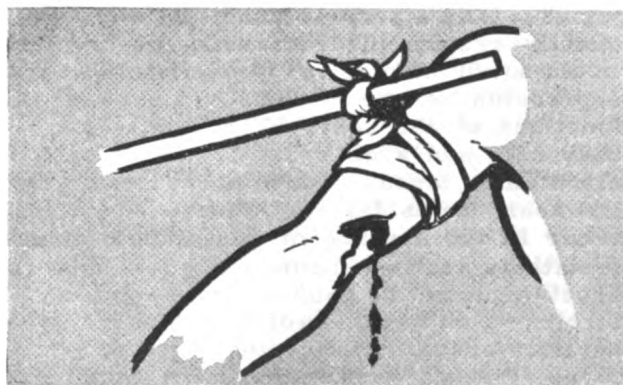


Figure 7-74.--A Simple Tourniquet.

cloth available, preferably inside surface of freshly laundered handkerchief or towel. If a fracture is present stop the bleeding in this manner and then give first aid for the fracture.

Bleeding from small vessels.

Treat as a simple wound. Apply a bandage compress so that it presses firmly on the wound.

BURNS

First aid.--The first need is to reduce pain and avoid shock. If a doctor is immediately available, apply a sterile dressing over the wound without removing clothing, wrap the victim in a blanket to keep him warm and call the doctor.

If a doctor is not available, carefully cut the clothing away from the burn. Avoid tearing or pulling. Do not try to remove bits of clothing or dirt which may be stuck to the burned area. Spread tannic acid jelly on a gauze compress, cover the burn, bandage lightly, wrap the victim in blankets and transport immediately to the hospital.

Persons with burns should be treated for shock.

Ointments, salves, or greasy substances should never, under any circumstances be put on a burn. These materials must be removed before proper treatment can be given by the doctor, and because they will not dissolve in water their removal is very difficult.

Chemical burns.--Use large quantities of water to dilute and wash off the chemical, followed by usual first aid for burns.

SHOCK (COLLAPSE)

Shock is present to some extent in all injuries. It is a serious condition which frequently results in death when the injuries would not of themselves prove fatal. It is a depression of the nervous system and the functions of the body. There is a loss of body heat and a decrease in the amount of circulating blood. To compensate for this the heart beats faster. Severe shock may occur in the absence of conspicuous manifestations such as hemorrhage. The term shock must not be confused with apoplexy or stroke, which is spoken of as "stroke" in some sections of the United States.

The first aid worker must not become so intent on the care of an injury that the victim develops severe shock because simple

preventive measures were omitted. The first aid measures for the prevention of shock are so simple and commonplace that the inexperienced might see little harm in omitting them. But, simple as they are, shock treatment is vitally important for every case.

As the amount of blood in circulation diminishes the brain does not get enough blood. Keep the casualty lying down so that the blood will go to the heart by gravity and may be pumped to the brain. Apply blankets and hot water bottles to prevent loss of body heat. This does not consist merely of piling blankets on top of an injured person--it is important to have as many thicknesses underneath him. Warm drinks (unless the casualty is unconscious) are beneficial. Do not remove more clothes from the victim than necessary to treat his injury. Loosen clothing at the neck, chest and waist.

Shock probably causes more fatalities than any other condition. Do not underestimate its dangers.

Symptoms.--Pale, especially about the face and lips (in injured women, do not let make-up confuse you--remove it), chilly, clammy sweat, nausea, mentally confused, weak rapid pulse, irregular breathing. May be unconscious.

First aid.--Lay flat with head low and feet raised.

Put blankets and wraps under and over victim.

Keep warm with hot water bottles but do not burn.

Give warm and sweetened drinks, but not if the person is unconscious or injured internally.

Do not give alcoholic drinks.

Get a doctor without delay.

FRACTURES

Definitions

Fracture--a broken bone.

Simple fracture--bone broken but skin is not.

Compound fracture--bone broken and skin broken. All fractures caused by bullets, bomb fragments or other missiles are compound.

Splint--an appliance made of wood or metal to keep in place and protect an injured part.

Fixed traction splint--a splint which protects and prevents motion of broken bones by exerting pull from the ends of the bone.

Immobilize--to make broken bone fragments immovable by use of splints.

Displacement--bone fragments out of normal position.

Overriding--Overlapping of the ends of a broken bone. This is caused by contraction of muscles and results in shortening of the limb. It may take place shortly after the fracture and may be avoided by early application of a fixed traction splint.

Recognition of Fractures

Pain and tenderness.

Partial or complete loss of use.

Deformity--may be pronounced or very slight.

Swelling and discoloration--frequently not present for several hours.

Sense of grating with motion.

In compound fractures, bone may or may not protrude through skin wound.

The Care of Fractures

In making an examination to determine whether or not a fracture has occurred, be very gentle. Care must be taken not to move the broken fragments. Sometimes the first touch of an injured limb may give one the feeling of broken edges grating together.

If fracture is suspected, handle the case as if a fracture were present. Large nerves and blood vessels run close to bones. If these should be cut by the sharp edges of the broken bone, paralysis or bleeding will follow. Pain and shock will be increased by the moving of bone fragments.

It is important to keep persons with fractures motionless until the limb has been splinted. Moving a person with a fractured bone without splints may increase shock and result in death. Traction splints most effectively protect the victim from these dangers. Deaths from fractured thighs were halved in the World War after traction splints were applied on the battlefield.

"Splint them where they lie." If you don't know how, get someone who does. If there is a compound fracture, get a doctor. If none is immediately available, expose the injury by carefully cutting away the clothing without moving the broken bone. Do not pull or tear away clothing. If there is bleeding it must be controlled. Apply sterile dressing, moving the injured part as little as possible while bandaging. The fracture should then be splinted.

Fracture of Spine

Broken backs and broken necks are so dangerous that they require special first aid

measures. Improper care may result in permanent paralysis or death of a person with these injuries.

Broken neck. --The victim, if conscious, will complain of pain in the neck. Many cases will hold the head and neck stiff and motionless, but some will be completely relaxed and have no control of the head. Injury to the spine may cause paralysis. Can the injured move his hands? Try his grip (both hands.) Record any paralysis or weakness on the identification tag.

Keep him lying in the position in which he was found and prevent motion of the head. Do not give him water as he may move his head to drink. Cover him with blankets or wraps. Get a doctor.

If a victim with a broken neck must be moved get a door, shutter, or wide board and place it beside him with the end at least 4 inches above the top of his head. The board should be at least 15 inches wide and 5 feet or more in length.

One person kneels at the victim's head, holding the head between his 2 hands and steadies the head so that the head, neck, and shoulders move as a unit with the body without bending. One or more assistants grasp the victim's clothing at the hips and shoulders and carefully slide him sideward onto the board or door so that he remains face upward, arms at his sides, head, trunk, and extremities on the board. The head must not be raised or the neck bent forward or sideways. The arms may then be folded over the chest and held together with safety pins or bandage. Several straps or triangle bandages should then be placed around the victim and the board to hold him in place during transportation. A folded sweater or coat should be placed around his head to hold it in position, or socks filled with sand or earth may be used. The board is then picked up and the victim transported as though he were on a stretcher.

If a victim with a broken neck is found lying on his face a door or wide board should be placed beside him as described above, and the arm at that side brought above the head. The person kneeling at the head grasps it firmly at the sides covering the ear and the back end of the jaw with his hands. Assistants grasp the victim's clothing at the shoulders and hips and gently roll him onto the board, the man at the head steadying the head so that it is kept in line with the rest of the body. Moderate traction should be exerted by the hands holding the head. The head must not be allowed to tilt either forward or backward.

Broken back. --When the backbone is broken below the neck, the only symptom may be pain in the back. If the spinal cord is damaged or under pressure, the victim may be unable to move his feet, but can move his hands.

Any move which doubles the injured man forward may cause death or paralysis for life. He must, therefore, be kept motionless in the position in which he is found. Get a doctor. Keep him warm. Reassure him. Do not let him move. If necessary to move a victim found on his back, place a door or wide board beside him as described above. Raise the arm on the side toward the board so that it is straight above the victim's head. Several assistants kneel alongside the board opposite the victim and, grasping his clothing on the far side, they roll him slowly and gently towards them so that he lies face downwards on the board. If a door is used the assistants kneel on the door, leaving enough space for the victim. In making this roll the body must move as a unit. There should be no twisting or jerking. Then bend one forearm so that the head will rest on it.

If a casualty with a broken back is found lying on his belly the door or board should be placed beside him. Assistants grasp his clothing and slide him onto the board, one person guarding his face. He remains in a face-down position. Several straps or bandages should then be placed around the victim and the board to bind him firmly in place during transportation.

Victims with broken backs should, if possible, be moved only on a rigid support. A blanket may safely be used if no rigid support is available. If the victim is on his back he must be rolled onto a blanket. If the victim is found lying on his belly he must be slid onto the blanket. If the victim is found on his side or in a crumpled condition he must be carefully straightened out. With one person at the feet, a second at the head, and one in the middle, the victim is rolled onto his back in the case of a broken neck and onto his belly in the case of a broken back.

If both the neck and back are broken, handle as a broken neck.

In case of doubt, handle a suspected fracture as if it were actually a fracture.

FIXED TRACTION SPLINTS

These are mechanical devices for immobilizing fractures simply by maintaining a steady pull on the affected limb. This tends to keep the broken fragments lined up in proper position. If applied early traction

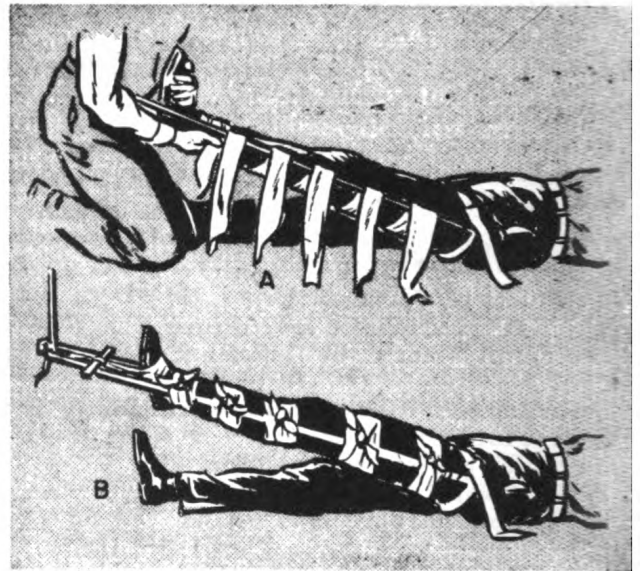


Figure 7-75.--Fixed Traction Splint.

splints prevent overriding or displacement of the broken fragments by the muscle spasm that develops. The steady pull also prevents the broken ends from injuring nerves and blood vessels.

Fixed traction for the lower extremity. -- The half ring leg splint known as the Keller-Blake Splint should be used for a fracture of the leg at any point from the hip to the ankle. The splint may be applied without removing clothing. Two first aid workers are needed for the application of the splint.

One person grasps the foot with or without the shoe on, keeping the foot at a right angle to the leg with the toes pointing up. A steady firm pull is made. At the same time the limb is straightened to a position as nearly normal as possible and the foot is slowly raised until the heel is a foot or more above the ground.

While pull is maintained, the splint is placed in position by slipping the half ring under the upper portion of the thigh with the short side-bar inside. Move the splint upwards until the half ring meets the crotch. Then buckle the strap snugly but not tightly across the thigh to the side bar on the opposite side.

Then apply a traction hitch to the foot. Tie two cravat bandages together, place the knot under the sole of the foot at the instep, so that it forms a stirrup. Carry ends of the bandage over the foot and around the ankle in opposite directions crossing behind and above the heel. Thread the ends under the folds which form the sides of the stirrup on each side. A free end now hangs from each side of the foot. These form the traction bands.

Carry these ends over the notched end of the splint and tie with a square knot.

Form a Spanish windlass by inserting a stick about 6 inches long between the traction bands. Twist the bands with the stick until all slack has been removed and strong traction is established. Then anchor the stick to keep the band from unwinding by tying the ends of the stick to the sides of the splint.

Support the limb in the splint. Hang the center of a cravat over the outside bar. Pass the end toward the leg, under the leg, and up between the leg and the inside bar. Take one end in each hand and draw outwards sufficiently to take any sag out of the leg. Pass the ends under the leg in opposite directions and tie at the outside bar. Five such bandages should be applied: (1) just below the crotch, (2) just above the knee, (3) just below the knee, (4) at the middle of the lower leg, and (5) at the ankle.

After the leg has been splinted the heel must not touch the ground. A cord may be tied at the end of the splint and the leg and splint suspended or the end of the splint may be placed on some bricks, stones, block of wood, curbstone or similar object. Most stretchers are provided with supports for splints of this type. If no support is provided the limb must be suspended during ambulance transport by a stout cord tied to the end of the splint.

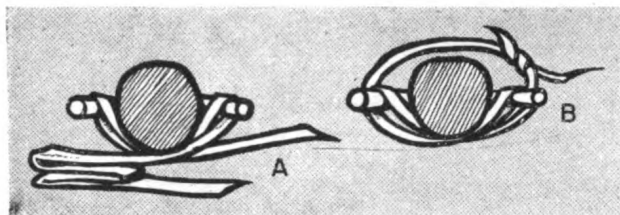


Figure 7-77.--Support of the leg in a splint.

Improvised fixed traction splints for the lower extremity.--Improvised fixed traction splints may be made from boards. For the lower extremity the board should be not less than 4 inches wide and should be 2 feet longer than the leg.

Cut a U-shaped notch in both ends of the board. Slip the middle of a cravat bandage into the crotch, bring the ends around the thigh and tie together with a square knot so that a loose loop is formed. While pulling firmly on the leg apply a traction hitch to the foot as described previously. Place the board on the outside of the leg and slip the looped cravat bandage into the notch in the upper end of the board. Then tie the traction bands over the notch in the lower end of the board. Apply traction by inserting a short stout stick between the two traction bands and twist until all slack has been taken up and strong traction established. Tie cravat bandages firmly but not tightly around the leg and splint, (1) at the crotch, (2) just above the knee, (3) just below the knee, (4) half way from the knee to the ankle, and (5) at the ankle.

After application of the splint do not allow the heel to touch the ground.

Fixed traction for the upper extremity.--The Murray-Jones or the Thomas arm splint is a fixed traction splint for the arm. It should be used for any fracture from the shoulder to a point halfway from the elbow to the wrist. It may be applied without removing clothing.

One operator grasps the wrist and applies steady, gentle traction, at the same time straightening the limb to a position as nearly normal as possible. The operator shifts his hands one at a time so the ring of the splint may be threaded over the victim's hand and passed up the arm until the lower part of the ring fits into the armpit. When the splint is in proper position the arm extends down between the sidebars with one bar on the thumb side and the other bar on the little finger side with the palm toward the victim's side.

Improvised fixed traction splint for the upper extremity.--A board at least 4 inches wide

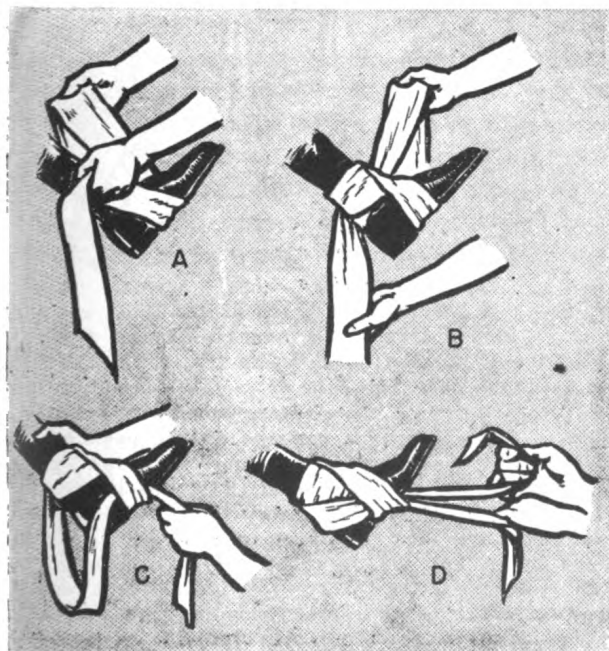


Figure 7-76.--Traction Hitch.

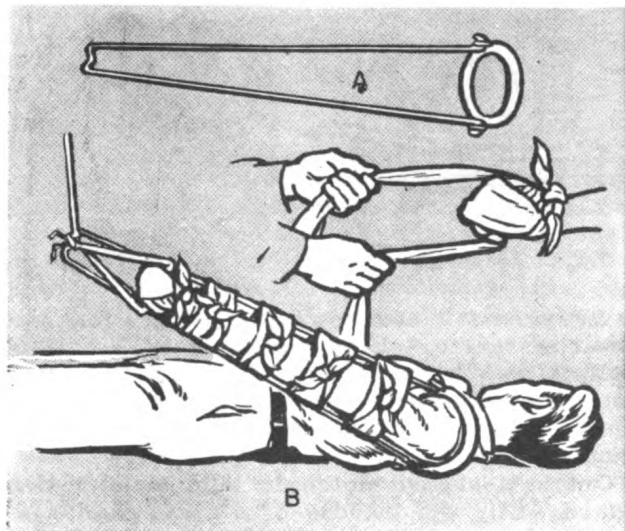


Figure 7-78.--Fixed traction splint for the arm.

and 2 feet longer than the arm is used. Cut a U-shaped notch in each end. Tie a folded triangle bandage around the arm so that it forms a loose loop in the armpit with the tied ends over the upper part of the shoulder. Apply a traction hitch to the hand as described previously. Insert the notch in the upper end of the board into the loop, applying the board to the outer surface of the arm. Bring the traction bands from the hand over the notch at the lower end of the splint. With one hand pull firmly on the wrist. With the other hand grasp the traction bands and push upward, pulling the bands through the notch, to make firm traction. Pass the ends around the board and tie. Encircle the arm and splint twice with folded triangle bandages and tie snugly (1) at the armpit, (2) just above the elbow, (3) just below the elbow, and (4) just above the wrist.

Other types of improvised splints.--The most common form of improvised splint is a thin piece of board, which should be well padded before it is applied to the limb. The splint must be long enough to immobilize the joints above and below the fracture. The splint may be padded with plenty of cotton, a blanket, a pillow or some similar material. Splints must be applied to the inner and outer surface of the limb in such a manner that the limb will not twist inside the splint. In the case of the lower leg this may be done by having the upper end of the splint well above the knee and the lower end extend beyond the foot. Tie the splint firmly to the affected part, using cravat bandages.

Fracture of the lower half of the forearm and of the hand or fingers.--Apply well pad-

ded wooden splints extending from the elbow to the fingertips on the front and back of the forearm and hand. Hold these in place by encircling them with 3 cravat bandages. Support the forearm and hand in a sling.

In the absence of a piece of wood, a newspaper, telephone book, or piece of linoleum or some other material which is rigid when folded or rolled may be applied with suitable padding between it and the part.

One of the great dangers in splinting of fractures is that the ties used to hold the splint to the part will be so tight that the

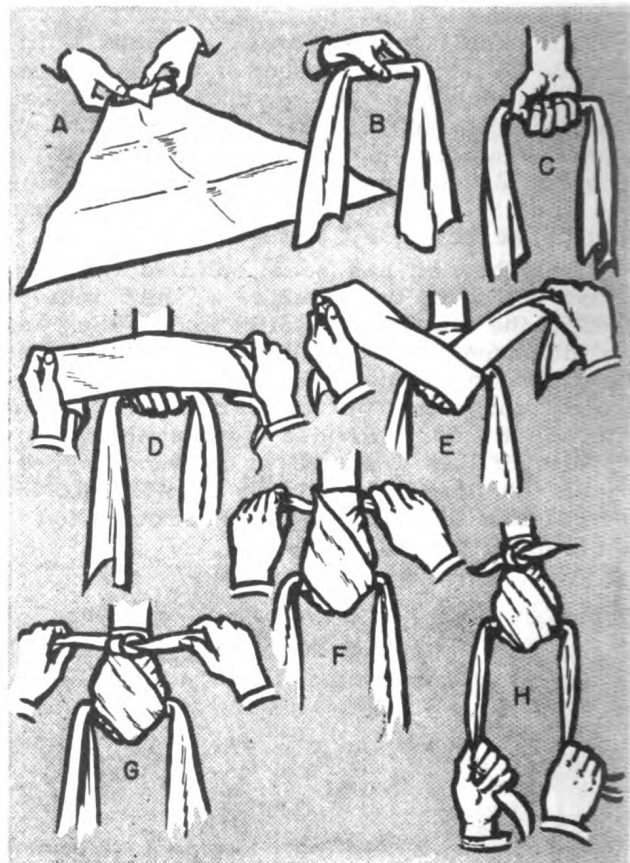


Figure 7-79.--Tying a Traction Hitch. Roll a stick, about 4 inches long, in a triangle bandage (A) so a long "tail" hangs from each end (B). Place wrapped stick crosswise in the palm of victim's hand (C), fold his fingers around it, allowing bandage ends to hang down. Place a cravat bandage on the back of his wrist (D), pass the ends around the wrist, cross them on the back of the hand (E), then bring them over the fingers snugly. Carry the ends to the palm side of the wrist, tie a single knot (F), bring the ends to the back of the wrist and tie a square knot (G), completing the hitch. The bandage ends hanging from the ends of the stick form the traction bands (H). The traction bands are tied in a square knot over the notch at the end of the splint, with enough pull to maintain traction.

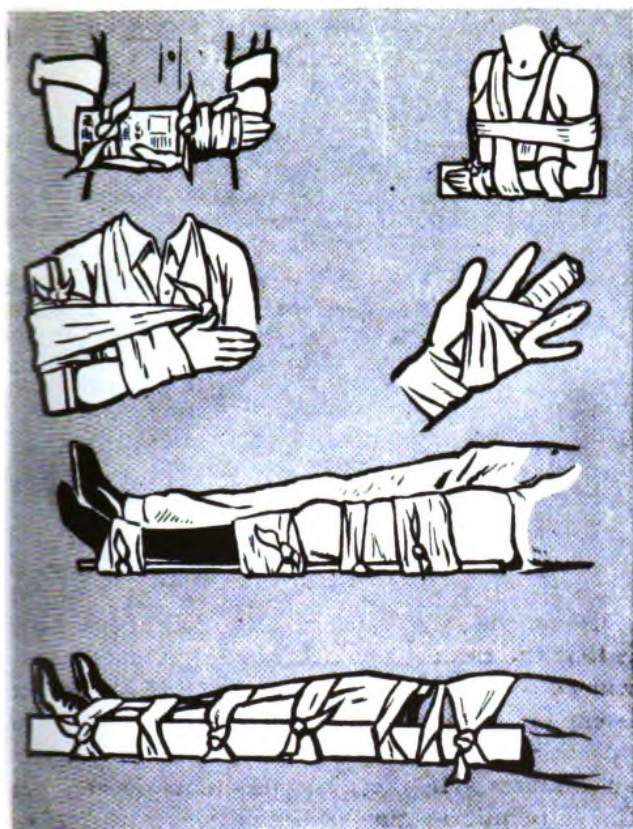


Figure 7-80.--Dealing with fractures of the forearm, hand, fingers and pelvis.

circulation of the blood is cut off. After applying a splint examine the fingers or toes,

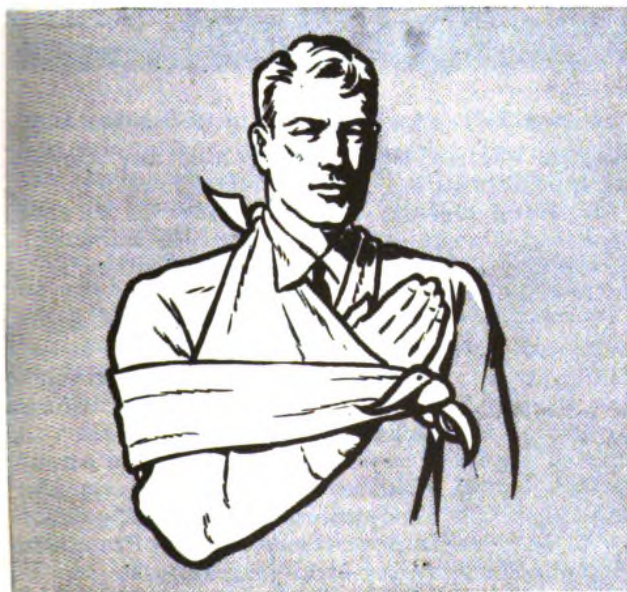


Figure 7-81.--Fracture of arm or collarbone.

as the case may be, every 15 to 20 minutes. If they become blue, loosen the ties to permit a return of circulation.

Fracture of the pelvis.--If after injury in the region of the hips or loins a casualty shows no signs of damage to the legs but is unable to stand or even move his legs without pain or difficulty, it must be assumed that the pelvis has been fractured.

First aid.--Place the victim in the position in which he is most comfortable, raising it or lowering his legs as he desires. Preferably he should be on his back with the legs straight but this is not essential. Apply a wide cravat bandage around the hips so that it is firm enough to give support but not tight enough to press broken bones inward. Tie both ankles and knees together with cravat bandages. Move him as described for a person with a broken back. He should not be allowed to pass water.

Moving Fracture Cases from Points of Danger

It may be necessary to move a fracture victim from a spot of great danger in order to save his life. An example might be a person in burning wreckage, close to a wall which is about to collapse, near a bomb which may explode, or in the way of traffic which must be kept moving. Under such conditions the victim should be prepared for removal from the danger zone as follows:

Fracture of arm or collar bone.--Place a sling in position, lay the forearm across the chest with the fingers toward the other shoulder, complete the sling. Then place a broad bandage gently but firmly around the body and the arm. Move the person in a lying position on a stretcher.

Fracture of leg.--Tie the feet and the knees together with bandages, letting the good leg support the broken one. If possible, get a board the length of the leg and bind it to the side of the fractured leg with wide bands going around both legs and the board. Transport in a lying position with great care.

Remember that these procedures are not best for the injured and are to be only used in emergencies where it would be unsafe to delay long enough to apply a fixed traction splint. As soon as the victim has been moved to safety a fixed traction splint should be applied.

Dislocation.--Do not try to reduce a dislocation, but immobilize by splinting and take to a physician. Dislocated shoulder is best immobilized with a Murray-Jones traction splint.

ARTIFICIAL RESPIRATION

Common Causes of Arrested Breathing or Asphyxia

Electric shock.

Carbon monoxide poisoning (illuminating gas, exhaust gas, or coal gas).

Drowning.

Concussion from explosions, or from blows on the head or abdomen.

Suffocation or strangulation due to external obstruction of the air passages.

Foreign bodies in the throat or windpipe, which obstruct the air passages.

A person who has stopped breathing from any of these causes must be made to breathe at once or he will die. Do not waste time on unnecessary things but get to work immediately, using the prone pressure method of artificial respiration. Get the victim into fresh air, clear the mouth or throat of any obstructions, and proceed as follows:

Standard Technique of Prone Pressure Method

1. Lay victim on his belly, one arm extended directly overhead, other arm bent at elbow. Turn face toward extended arm, resting the head on hand and fingers of bent arm so that nose and mouth are free for breathing and may be seen by the operator.

2. Kneel straddling the victim's thighs, with your knees just above his knees, adjusting your position so that you can comfortably lean forward and place the palms of your hands on the lower part of his chest with the little fingers resting over the lowest ribs. Your wrists should be about four inches apart.

3. With your arms held straight, swing forward slowly, so that the weight of your body is gradually brought to bear upon the victim. Your shoulders should be directly over the heels of your hands at the end of the forward swing. This operation should take about 2 seconds. Do not bend your elbows.

4. Quickly swing backward so as to remove pressure completely.

5. After 2 seconds swing forward again. Repeat steps 3 and 4 regularly 12 to 15 times a minute.

6. Continue artificial respiration without interruption until natural breathing is restored--for hours, if necessary--or until a physician declares victim dead.

7. Have an assistant loosen tight clothing about the victim's neck, chest or waist. Keep

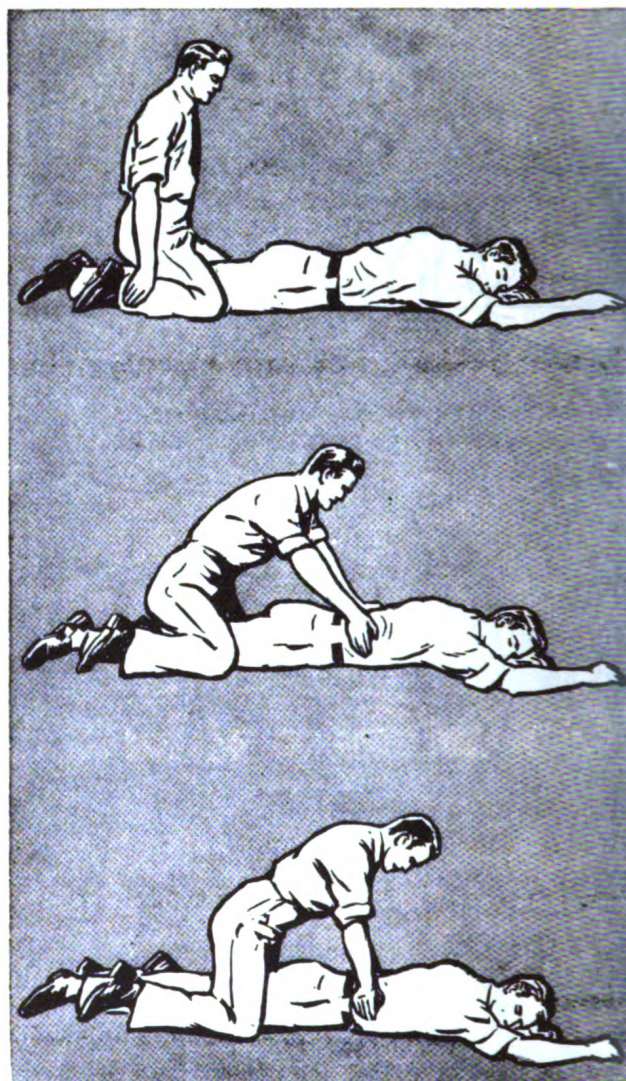


Figure 7-82.--Applying Artificial Respiration.

victim warm. Do not give him any liquids by mouth until he is fully conscious.

8. Keep victim lying down after he revives to avoid strain on his heart. He should be given hot tea or coffee to drink after he is fully conscious.

9. Resuscitation should be carried on as near as possible to where victim received his injuries. Should it be necessary to move the victim from the point of the accident, artificial respiration should be carried on during the time he is being moved. He should not be moved again until he is breathing normally, and then moved only in a lying position.

10. After a temporary recovery of respiration the victim may stop breathing again. He must be watched and if natural breathing stops, artificial respiration must be resumed at once.

11. In carrying out resuscitation it may be necessary to change operators. This change must be made without losing the rhythm of respiration.

The pressure exerted by the forward swing must be regulated to meet the comparative sizes of operator and victim. Too much pressure is harmful, and the tendency is always to press too hard in an effort to make the victim breathe. The pressure empties the used air from the chest. An inrush of fresh air takes place in the rest interval when no pressure is being exerted.

Pressure must be in the correct place to force air from the chest. Make sure that your hands are in the proper position and that they do not get too low.

Be sure that the nose and mouth are free of obstruction so that air can pass in and out. If frothy bubbles collect in the mouth, they should be wiped out by an assistant.

Keep the victim warm. Blankets, wraps, or even newspapers should be wrapped around him. You can continue to work through this covering without exposing the victim to the wind.

Only by continued practice will you be able to give artificial respiration effectively under the excitement of an emergency. Therefore you should practice regularly on any willing subject. Never give up. Many persons have been revived after hours of work. Alternate with other workers when you are fatigued. Stop only when the victim has revived or the case has been taken over by a physician.

TRANSPORTATION OF THE INJURED

Do not move an injured person if it is unsafe to do so. Before moving him be sure that (1) bleeding is stopped; (2) he is breathing; (3) he is warm; (4) all fractures have been splinted.

The journey to the hospital is frequently the one thing that accident victims remember. Rough, careless or unnecessary handling may cause shock and result in death. Be gentle and go slowly.

Stretcher Bearing

All persons trained in first aid should be thoroughly drilled in stretcher bearing. In the event of a civilian war disaster, persons trained as stretcher bearers will assist Rescue Squads by transporting casualties to the nearest First Aid Post, Casualty Station, or other place of safety.

Lifting an injured person onto a stretcher is the first step in transportation. Get all the help you need. Have the stretcher ready, with blankets in place. Arrange the blankets so that there are 4 thicknesses underneath to 2 on top.

Lifts and Carries

Seriously injured persons must be lifted very carefully. If possible get 6 or 8 assistants, who line up 3 or 4 on each side. All take orders from the leader so that they will move together. Orders should be clearly given and explained when untrained persons are helping.

1. "Kneel on the knee nearest the victim's feet."

2. "Slip your hands under the victim's body, until your fingers meet those of the man opposite you."

3. "All together, *LIFT*." The victim is lifted to the level of the knees, and another assistant slides the stretcher between the two rows of bearers. If no one is available to place the stretcher, the bearers will continue the lift until all are standing, and then step sideways to the stretcher, which has been placed at the feet of the victim.

4. "All together, *LOWER*." Gently and carefully the victim is lowered to the stretcher.

When only 3 bearers are available, all lift from the same side, one supporting the head and shoulders, one the waist and hips, the third the knees and ankles. They kneel, slip their hands under the victim, get a good hold and lift on command, resting the victim on their raised knees, to get a better hold. Then rising to a standing position, they walk to the stretcher.

When only 2 bearers are available, carries are limited to short distances. Even with a stretcher 2 bearers are rapidly fatigued with a victim of equal weight.



Figure 7-83.--Lift for 6 or more persons.

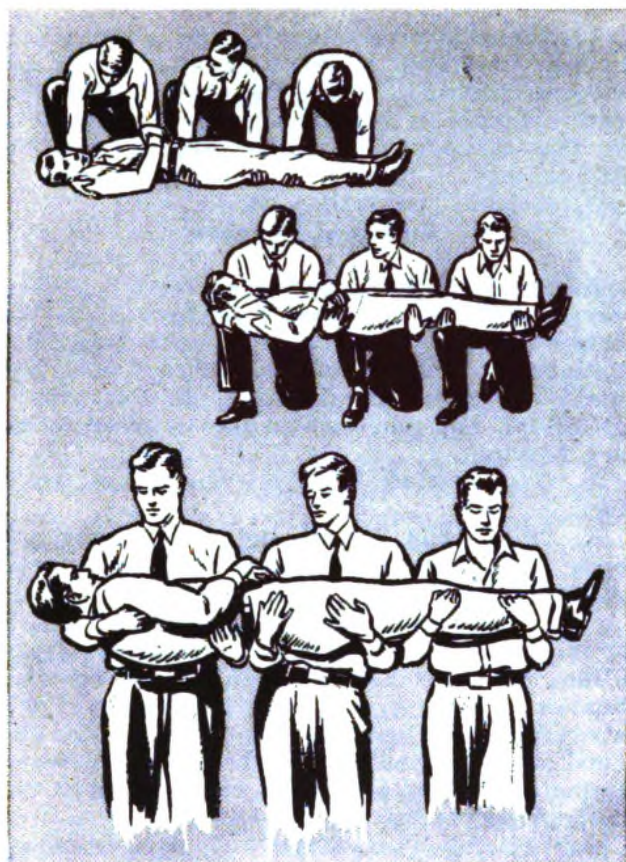


Figure 7-84.--Three-man lift and carry.



Figure 7-85.--Chair Carry.

The one-man lifts and carries, such as the fireman's carry and the pack-strap carry, are exceedingly dangerous for both victim and bearer, and should not be used if it is possible to wait for help.

Persons with back or neck injuries or suspected fracture of the spine must not be picked up, but must be kept flat and rolled or

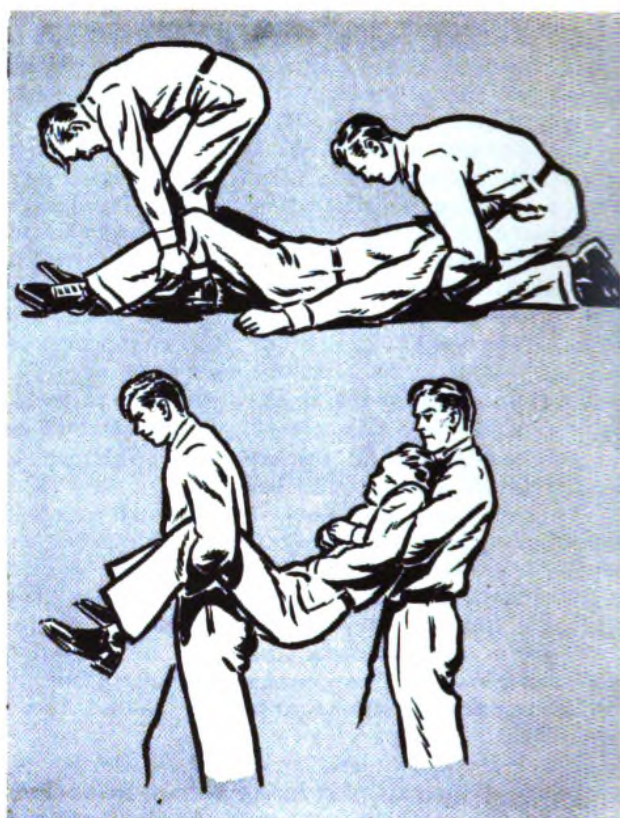


Figure 7-86.--Two-man Lift and Carry.

slid onto a door or board, which is then lifted to a stretcher.

Stretchers Are of Several Types

Army stretcher--poles and canvas, with metal braces to spread sidepoles, and metal stirrups which serve as legs to raise it off the ground.

Navy stretcher--metal basket.

Industrial type--canvas with wide hems at sides through which poles are slid.

Improved blanket stretcher--made with blanket folded in thirds over poles. Place a pole a little longer than the blanket about a foot from the center of the blanket. Fold the short side of the material over the pole toward the other side. Place the second pole on the 2 thicknesses about 2 feet from the other pole and parallel to it. Fold the remaining side of the blanket across the second pole toward the first. When the injured is placed on the blanket the folds of the blanket are locked by the friction exerted by the weight of the body.

Blanket, without poles, with edges rolled toward victim. Place a blanket on a flat surface (floor or street) and starting from the

edge roll the blanket in a tight roll from each side toward the center until all the blanket except for a strip 2 feet wide down the middle has been rolled. Place the victim on the unrolled part. The rolled part forms a satisfactory grip. Six bearers are necessary. One pair supports the shoulders and head, the second the abdomen and hips, the third the lower extremities.

Door, shutter, ladder with boards, or chair. Any flat surface large and strong enough to support the body may be used for a stretcher. There will be considerable discomfort if the victim is carried on a hard surface for any distance and padding should therefore be provided if available.

In using a chair for a stretcher the straight-backed variety is best. Seat the victim in the chair. The chair is tipped backwards onto its back legs. Bearer number 1 lifts by the front legs and bearer number 2 by the back of the chair, the patient being in a semi-reclining position.

A satisfactory stretcher may be improvised by using 3 or 4 jackets or coats and 2 poles. The jackets may be turned inside out and 2 poles are passed through the sleeves. The flaps are then turned down around the poles and buttoned underneath. Be sure to test the strength of the stretcher before loading it.

Before loading a stretcher, find out whether it will clear corners and narrow winding passages. The victim should be lashed to the stretcher with several cravat bandages if it is necessary to turn the stretcher up on edge or set on end to get around difficult passages or stairways.

Trained stretcher teams will load stretchers into ambulances and trucks at First Aid Posts and Casualty Stations.

When a truck stops suddenly, everything tends to slide forward. To avoid injury to the victim's head he should ride feet first, unless he has a fractured leg. In double-deck ambulances or trucks the upper stretchers are

loaded first, and then the lower ones slid under them. Lower tier stretchers are unloaded first.

For their own benefit and to help maintain public morale, injured persons should be removed promptly from the scene of an accident.

MISCELLANEOUS CONDITIONS

Heat Stroke (Sun Stroke)

It is not necessary that the individual be exposed to the sun's rays to develop heat stroke. Clothing which prevents the escape of heat (gas-proof clothing or firemen's coats and boots), excessive humidity, fatigue, particularly in the absence of a current of air, increase the danger of heat stroke.

Symptoms.--Headache, dizziness, nausea. The victim may appear flushed or may have a bluish color about the face and lips. He may be unconscious. The body temperature is elevated, the skin is hot and dry.

First aid.--For mild cases wrap the victim in a wet sheet and expose to cold drafts of air, as from a fan. For more severe cases apply ice to the temples and the back of the neck. Place in a cool bath for 20 minutes, at the same time rubbing the limbs and trunk to stimulate circulation.

Heat Exhaustion (Prostration)

Heat exhaustion is a form of shock resulting from exposure to heat. It occurs more frequently when the humidity is high. It is a serious condition requiring prompt first aid treatment.

Symptoms.--The symptoms are those of shock: face pale, cold, clammy sweat, weak and rapid pulse, slow respiration.

Treatment.--The same as the treatment for shock. Do not confuse this condition with heat or sun stroke. The treatment is exactly opposite.

Heat Cramps

Persons exposed to intense heat or doing manual labor lose large amounts of salt in their perspiration. As the salt is depleted, muscular cramps may develop.

Symptoms.--Spasmodic cramps of the muscles of the abdomen and limbs.

First aid.--Prevention is more important than treatment. Men at hard work in high temperatures drink large amounts of water to replace the fluid lost in perspiration. The

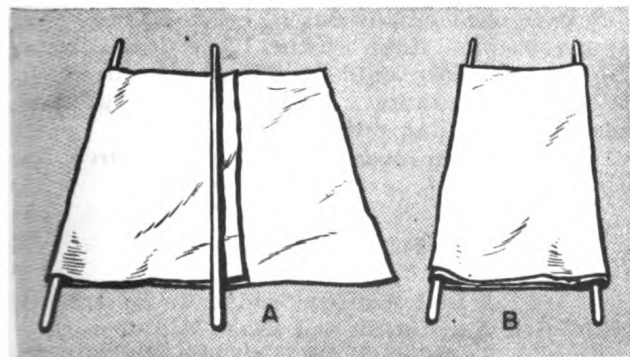


Figure 7-87.--Improvised Blanket Stretcher

salt lost in the perspiration should be replaced by adding a good-sized pinch of table salt to each glass of water.

After the condition has developed, treatment consists of warm baths, rest, drinks to which salt has been added. If the cramps are severe or persist, a doctor should be called.

Frostbite

Frostbite is more likely to occur in damp and windy weather.

Symptoms.--There is tingling of the skin followed by numbness. As the part becomes numb it takes on a dead whiteness. At this stage the tissues are not actually lifeless, though they may soon become so, even in warm atmosphere. The skin may then appear reddened or purplish and it may crack. Very large blisters are ordinarily formed.

First aid. Have the victim exercise the part if he can. Do not massage it. Allow the water temperature to rise slowly. To obtain the best results the thawing process should be drawn out for several hours. Do not break any blisters. Apply a sterile dressing to the part and take the person to a doctor.

Carbon Monoxide Poisoning

There is serious danger of carbon monoxide poisoning in modern warfare. Bombs exploding near a building or home may cause collapse or blocking of a chimney or flue so that carbon monoxide gas escapes into the house from the furnace. Illuminating gas has a high content of carbon monoxide and its escape through disrupted gas mains is a serious hazard. When a bomb explodes a large amount of carbon monoxide gas may result from incomplete combustion of the explosive.

The gas is odorless, colorless and tasteless. It may produce death even in low concentrations if breathed for some time. In high concentrations it may produce death in a few minutes. The body stores carbon monoxide. People doing manual labor breathe faster than those at rest and tend to be overcome more rapidly.

Carbon monoxide poisoning steals upon the victim in such a way that he may be overcome by the gas without warning.

Symptoms.--The symptoms are numerous, the more pronounced being headache, yawning, giddiness, ringing in the ears, weariness and a fluttering or throbbing of the heart, which is a late symptom. If the victim gets into fresh air these symptoms usually pass

off, often leaving a headache. If the victim remains in the presence of carbon monoxide gas his legs collapse under him, he may stagger and sink to the ground in a semi-conscious or unconscious state.

First aid.--Remove the victim to fresh air as quickly as possible.

If breathing has stopped, is weak and intermittent, or is present only in occasional gasps, start artificial respiration at once, using the prone pressure method. If oxygen is available it should be given while artificial respiration is administered.

Aid circulation by rubbing the limbs, keeping the victim warm with blankets and hot water bottles.

Keep the victim at rest, lying down to avoid any strain on the heart.

Inhalations of oxygen for 20 minutes, when given immediately, decrease the possibility of serious after-effects. Oxygen should be given to all victims if possible.

Unconsciousness

Anyone who is unconscious is in a serious condition and should have immediate medical attention. Before the doctor arrives there are certain things which those trained in first aid should do:

Bleeding?--If so, control the bleeding and dress the wound.

Breathing? "*Blue unconsciousness.*"--If not breathing, with a bluish or blotched face, start artificial respiration at once. Be sure there is no obstruction in the throat. Be careful of electric shock if the victim is found in contact with wires, plumbing or heating pipes or other conductors which may have become temporarily charged. Do not expose yourself to electric shock by careless handling of the victim. Be careful of carbon monoxide gas and do not become a victim yourself. Remember that persons not breathing become chilled very rapidly and must be kept warm during artificial respiration.

"*Red unconsciousness.*"--Red face and strong pulse. Keep victim lying down, head slightly raised, cold applications to head, give no stimulants. Prevent chilling, and transport in lying position.

"*White unconsciousness.*"--The same as shock.

REFERENCE

FM 21-11 First Aid for Soldiers.
FM 21-10 Sanitation and First Aid.
American Red Cross - First Aid Text Book.

Unit VIII

APPENDIX

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CONSTITUTION
CIVIL AIR PATROL (INCORPORATED)

PREAMBLE

WHEREAS--in the fall of 1941 a group of aviation-minded public-spirited private citizens consisting of owners of private airplanes, owners and operators of private air fields, civilian pilots, airplane mechanics, persons interested in private flying, various manufacturers, bankers, municipal officials in coastal and border cities and others interested in the common air defense of the United States, organized themselves under the national Office of Civilian Defense into a national organization which was named the "Civil Air Patrol," and

WHEREAS--the said organization developed units, consisting of state-wide so-called "Wings," composed in turn of various "Groups" containing several "Squadrons" of one or more "Flights," which immediately started training, equipping and organizing civilians interested in air defense and service for use by the Government, in the national emergency, and

WHEREAS--the War Department during World War II assigned various military missions to the personnel of the Civil Air Patrol, said missions including anti-submarine patrols, border patrols, tracking, courier, target-towing and similar assignments, in some of which some of the personnel served as armed combatants while on such assigned duty, and

WHEREAS--under date of April 29, 1943 the President of the United States by Executive Order No. 9339 transferred all activities and administration of the said "Civil Air Patrol" to the War Department, and

WHEREAS--the Secretary of War by order dated War Dept. Memo W-95-12-43; 5-4-1943 charged the Commanding General of the Army Air Forces with the subsequent supervision, direction and operation of the "Civil Air Patrol," and

WHEREAS--since that time the said organization has functioned continuously as a voluntary civilian auxiliary of the Air Force and is now engaged in promoting civilian aviation and training, and

WHEREAS--the 79th Congress of the United States by Public Law 476 duly adopted and signed July 1, 1946, duly incorporated the said "Civil Air Patrol;" and the forty-eight (48) persons named in the said Act "and their associates and successors" were duly "authorized to complete the organization of the corporation by the selection of officers, the adoption of a Constitution and By-Laws, the promulgating of rules or regulations that may be necessary for the accomplishment of the purposes of this corporation and the doing of such other acts as may be necessary for such purposes,"

NOW THEREFORE the said incorporators, their associates and successors, pursuant to the said Act of Incorporation, do hereby adopt the following as the Constitution and By-Laws of the said corporation:-

ARTICLE I--Name

The name of the corporation shall be "Civil Air Patrol."

Whenever and wherever it is necessary for the fact of its incorporation to be stated, such fact shall be made known by the addition of the word "Incorporated" after the name of the corporation, with or without the addition of the words "Under Special Act of Congress approved July 1, 1946, Pub. Law 476 - 79th Cong." as the circumstances may require.

ARTICLE II--Seal

The corporate seal shall have inscribed thereon the name of the corporation, an appropriate statement of the incidents of its incorporation and the words "Corporate Seal."

ARTICLE III--Registered Office

The registered principal office of the corporation shall at all times be in the City of Washington, District of Columbia, or at such other location as Congress may designate as the seat of the National Government of the United States or as the principal office of the corporation.

ARTICLE IV--Term

Pursuant to the terms of the Act of its incorporation, the corporation shall have perpetual succession.

ARTICLE V--Objects, Purposes

Pursuant to the terms of the Act of its incorporation, the objects and purposes of the corporation shall be:-

- (a) To provide an organization to encourage and aid American citizens in the contribution of their efforts, services and resources in the development of aviation and in the maintenance of air supremacy,
To encourage and develop by example the voluntary contribution of private citizens to the public welfare,
- (b) To provide aviation education and training, especially to its senior and cadet members,
To encourage and foster civil aviation in local communities,
To provide an organization of private citizens with adequate facilities to assist in meeting local and national emergencies.

ARTICLE VI--Powers

In addition to the powers granted to the corporation by the Act of its incorporation which are specifically exercised in this Constitution and any By-Laws adopted hereunder, the corporation shall have all other powers given to it by the Act of its incorporation and such additional powers as may be given to it from time to time by Congress and/or any Government agency or officer properly acting under authority from it.

ARTICLE VII--Membership

All persons who on July 1, 1946 were members of the Civil Air Patrol as it was constituted prior thereto automatically became members in the corporation as of that date. All persons who between July 1, 1946 and the date the Constitution and By-Laws are adopted became members of the Civil Air Patrol as it was operating between those dates automatically became members in the corporation as of the date of their joining the organization as it then operated. On and after the date of said adoption any American citizen interested in aviation and in the air defense of this country and its territories, possessions and dependencies, as set forth in the objects and purposes of the corporation, who meets the qualifications for membership as shall be provided from time to time by the Constitution or By-Laws of the corporation shall be eligible for membership in the corporation, and upon qualifying therefor shall thereby become members in the corporation.

The types of memberships and the groupings of the members shall be as the Constitution or By-Laws of the corporation may from time to time provide.

ARTICLE VIII--Governing Body

The business of the corporation shall be conducted through a governing body to be known and designated as the "National Board" which, after adoption of the Constitution and By-Laws, shall be constituted as provided from time to time by the Constitution and/or By-Laws of the corporation but which shall consist of at least one (1) representative from each State in the United States and from each territory, principal possession and dependency of the United States where the corporation shall be active.

The members of the "National Board" shall be selected, meet, serve such terms, vote, operate, select officers and representatives and otherwise conduct and supervise the activities of the corporation in such manner as the Constitution and By-Laws of the corporation shall from time to time provide.

The persons named in the Act of Incorporation or their successors shall constitute the original "National Board" and they shall function as such until adoption of the Constitution and By-Laws or until their successors are duly selected in accordance with the provisions of the Constitution or By-Laws of the corporation applicable thereto.

ARTICLE IX--Fiscal Year

The fiscal year of the corporation shall be from January 1 to December 31.

ARTICLE X--Reports

The "National Board," as soon after the completion of each fiscal year as shall be possible, shall have prepared a full report of all of the activities of the corporation during the said fiscal year and shall, on or before June 1, following, transmit a copy of same, as prescribed in the Act of Incorporation, to the President and to every member of the Congress of the United States, and to such other officers of the Government as may be concerned therewith. Copies thereof shall also be transmitted to all members of the National Board and to the officers in the corporation and to such members in the corporation as may request the same.

ARTICLE XI--Property & Funds

All property and funds acquired by the corporation in any manner and from whatever source shall be administered by the "National Board" in such manner as the Constitution and By-Laws of the corporation shall from time to time provide.

The "National Board" may create or designate Trustees to hold and handle funds given to the corporation in trust to further its corporate purposes.

ARTICLE XII--Insignia, Rules, Regulations

All insignia, copyrights, emblems and badges, descriptive or designating marks and words or phrases used by the Civil Air Patrol on or before July 1, 1946 are hereby appropriated as insignia copyrights, emblems and badges, descriptive and designating marks and words or phrases of the corporation. Likewise all such items used by the Civil Air Patrol between July 1, 1946 and the date of the adoption of the Constitution and By-Laws are similarly appropriated as items of the corporation.

All Rules, Regulations, Orders, Instruction Manuals, operating, executive and/or Manning Tables, Organization Set-ups and any and all administrative programs in effect on July 1, 1946 are hereby adopted as the Rules, Regulations, Orders, Instruction Manuals, Manning Tables, operating, executive and/or Organization Set-ups and administrative programs of the corporation as of July 1, 1946. Likewise any such documents and/or programs which were continued in effect after July 1, 1946 and any and all such documents and/or programs which were instituted between July 1, 1946 and the date of adoption shall be considered as acts of the corporation and the same are hereby ratified and accepted as such. Any and all such documents and/or programs in effect on the date of adoption of the Constitution and By-Laws shall continue in full force and effect thereafter until the same are changed, amended, revoked, replaced or otherwise disposed of in accordance with any procedure which the Constitution and By-Laws of the corporation may from time to time provide pertaining thereto.

The rank, position and duties of all personnel in the Civil Air Patrol on July 1, 1946 shall be considered as the rank, position and duties of the said personnel in the corporation as of July 1, 1946. Any promotions, resignations, new appointments, dismissals and/or any other changes in the said personnel made between July 1, 1946 and the date of said adoption, pursuant to the practice of the Civil Air Patrol during the said dates, shall be considered as having occurred within the corporation and the same are hereby accepted and ratified as such. The rank, position and duties of all personnel in office on the date of said adoption shall continue in full force and effect until

the same may be changed or otherwise affected in accordance with any procedure which the Constitution and By-Laws of the corporation may from time to time provide pertaining thereto.

On and after the date of said adoption, all actions relating to insignia, copyrights, emblems and badges, descriptive or designating marks and words or phrases and to the development, installation, enforcement and handling of any and all operating, executive and/or administrative programs and/or to the promulgation, recession, cancellation, change, amendment or alteration of any and all Rules, Regulations, Orders, Instruction Manuals, Manning Tables, Organization Set-ups and the like - and/or to the rank, position and duties of all personnel and the like - and/or to all questions of corporate action and procedure shall be governed by the provisions of the Constitution and By-Laws of the corporation in effect at the time pertaining thereto.

ARTICLE XIII--Adoption of By-Laws

The National Board shall adopt, amend and maintain such By-Laws for the administration of the activities, business and affairs of the corporation as in their judgment from time to time shall seem most fitting for carrying out the purposes and objects of the corporation.

ARTICLE XIV--Inclusive Provision

This Constitution is intended to and does include all of the necessary and pertinent provisions of the Act of Incorporation required in a Constitution of such a corporation. Those sections of the Act which specifically conveyed powers, limitations, restrictions and the like to the corporation are included herein by reference. Likewise any amendments, changes or variations made in the said Act shall automatically become immediately parts hereof and all parts hereof inconsistent therewith shall thereby be automatically revoked and cancelled forthwith.

ARTICLE XV--Amendments to Constitution

This Constitution may be amended at any time by the National Board, within the limits of the Act of Incorporation or any amendments thereto, upon written approval of at least two-thirds (2/3) of the members of the National Board then in office, providing due written notice of any proposed amendment is forwarded to each member of the National Board then in office, at least thirty (30) days prior to the day set for such action to be taken and provided within the time specified, which shall not be less than thirty (30) days, the required written approval of the necessary number of members of the National Board is thus obtained either by registered mail and/or at a meeting specifically called for the purpose.

ARTICLE XVI--Additional Powers of the National Board

The National Board by a majority vote shall have the power and right to delegate any of the powers and duties possessed by the National Board, the National Executive Board under and by virtue of the Charter, Constitution and By-Laws of the Civil Air Patrol, to the Secretary of the Air Force or his designee. In case of such delegation of said powers and duties the Secretary of the Air Force or his designee shall become and be designated as the National Commander of the Civil Air Patrol.

BY-LAWS

CIVIL AIR PATROL (INCORPORATED)

SECTION 1--Statutory Authority

These By-Laws have been adopted as the By-Laws of the Civil Air Patrol pursuant to the provisions of the Act of its incorporation adopted by Congress and approved July 1, 1946 and pursuant to the provisions of the Constitution of the corporation duly adopted by the original incorporators under the powers granted to them by the said Act of Incorporation, and the provisions hereof are in all respects, at all times, subject to the provisions of the said Act and the said Constitution.

SECTION 2--Membership

Eligibility.--Any United States citizen, interested in promoting the objects and purposes of the Civil Air Patrol shall be eligible for membership in the Civil Air Patrol upon compliance with the requirements for membership.

Cadet Membership.--Any United States citizen fifteen (15) years of age and under eighteen (18) years of age, upon compliance with the requirements for such membership, may become a Cadet member of the Civil Air Patrol.

Senior Membership.--Any United States citizen eighteen (18) years of age, or over, upon compliance with the requirements for such membership, may become a Senior member of the Civil Air Patrol.

Active Membership.--Members, other than Cadets, and Cadets while so assigned, when subject to call for any active duty assignments shall be considered as Active Members of the Civil Air Patrol.

Veteran Membership.--All members who have served on active duty assignments away from the headquarters of their particular unit for a total of thirty (30) days or more or have been subject to and have fulfilled all active duty assignments required of them at the headquarters of their particular unit during a period of three (3) years or more, all such service being honorable, shall be considered as Veteran Members of the Civil Air Patrol.

Associate Membership.--Any United States citizen interested in promoting the objects and purposes of the Civil Air Patrol may secure an Associate Membership in the Civil Air Patrol upon compliance with the requirements for such membership and upon the payment to the Treasury of the local unit with which they desire to be associated, dues as follows:--

Regular Associate Members	\$ 10.00 per year
Sustaining Associate Members	50.00 per year
Contributing Associate Members	100.00 or more per year

Dues.--Dues for membership in any particular unit may be as fixed from time to time by the members of the said unit by and with the approval of the Wing Commander having jurisdiction over the same.

Allocation of Dues.--Eighty-five percent (85%) of all dues collected shall be retained and accounted for by the unit to which they are paid.

Fifteen percent (15%) of all dues collected shall be forwarded by the unit to which they are paid to its Wing.

The Wing will forward thirty-three and one-third percent (33-1/3%) of said monies received by the Wing to the Chief National Finance Officer.

Oaths.--Members shall be required to take such oaths as shall be prescribed.

SECTION 3--Membership Units

Wings.--The state and territory units of the corporation shall be designated as "Wings." There shall be one (1) Wing for each State or Territory of the United States in which active units of the Civil Air Patrol are located. Wings shall not be constituted as separate legal entities but each Wing shall be named and known by the name of the State or Territory of the United States which it includes. Each member of the Civil Air Patrol, by joining the organization, shall thereby become automatically a member of the Wing of the state or territory in which his place of residence or business is located.

Groups.--Each Wing, if the geographic composition of the area which it covers and the number of members included within the Wing so warrants, may be subdivided by the Wing Commander into two (2) or more Groups and each Group shall then be designated with a proper geographical prefix as that Group of the area Wing of which it is a part. Groups shall not be constituted as separate legal entities. Each member of the Civil Air Patrol living in or doing business in areas where Groups exist, by joining the organization, shall thereby become automatically not only a member of a Wing but also a member of the Group of that Wing in which their place of residence or business is located.

Squadrons.--Squadrons will consist of two (2) or more Flights, whose centers of activities are within the same general geographic area, and which may, by and with the consent and approval of the Wing Commanders, organize themselves into a Squadron of the Group and/or Wing to which their members belong. A Squadron will not be constituted a legal entity but will function as a local unit of Civil Air Patrol members.

Flights.--Wherever possible the Wing and/or Group and/or Squadron Commanders shall establish active Civil Air Patrol centers of activity on local, private or public air fields, or at some suitably located central places in communities where reasonably large numbers of members of the organization are located.

All Senior and Cadet members and all Active, Veteran and/or Associate members of the Civil Air Patrol who so desire, shall be organized by the Wing and/or Group and/or Squadron Commanders into local community units of the Wing and/or Group and/or Squadron units and each unit so organized shall be known and designated as a "Flight."

Flights shall not be constituted as separate legal entities but they shall function for all local purposes as a unit of Civil

Air Patrol members, and every member of the Civil Air Patrol who desires to do so, may be assigned by the Wing Commander to such Flight as may most conveniently be located near their place of residence or business and which can best use the member's services or give the member the training and activity which they desire.

SECTION 4--Unit Meetings

To all intents and purposes the annual meetings of the National Board shall constitute meetings of the general membership of the corporation.

Wing, Group, Squadron and Flight meetings may be called by the unit commanders.

There shall be no meetings of the general national membership unless the National Executive Board by and with the consent and approval of the National Board considers such a meeting necessary.

Minutes.--Full and complete minutes of all business meetings of all units of the corporation shall be made and the original copy of same shall be kept among the records of the unit. Full copies of the minutes shall be sent to the office of the Wing Commander in whose area the unit is located.

SECTION 5--National Board

The governing body of the Civil Air Patrol in which all powers of government and management of the corporation shall be lodged, shall be the National Board.

Composition.--Each Wing shall be entitled to one (1) member on the National Board and the Wing Commander shall automatically be the member on the National Board. These members shall be known as the Wing members and they shall hold office as such so long as they are Wing Commanders. The Wing Commanders in office on the date of the adoption of the Constitution and By-Laws shall automatically become members of the National Board as of that date, and they shall serve until their successors are duly appointed and qualified.

There shall be nine (9) additional National Board members known as "Members-at-Large," one (1) for each of the nine regions that exist in the National Headquarters organization plan.

Any members of the National Executive Board who are not otherwise members of the National Board shall, ex officio, be members of the National Board.

Appointment and Removal.--Appointment to or removal from the National Board shall be made by and with the consent of the majority of the National Executive Board when in their opinion such appointment or removal serves the best interests of the organization.

Annual Meeting.--The regular annual meeting of the National Board shall be held in Washington, D. C. and at such time as the National Executive Board shall determine. Due notice of the time and place of such meeting shall be sent to each member of the National Board at least twenty (20) days in advance thereof.

The purposes of the annual meeting of the National Board shall include the organization of the National Board, the appointment of Committees, the receipt and review of all reports, the selection of administrative officers and consideration of the regular business affairs of the corporation.

Special Meetings.--Special meetings of the National Board may be called by the Chairman of the National Executive Board for such times and places as he may determine, or by a majority of the National Board upon written request.

Notice of all special meetings shall be given at least fifteen (15) days in advance and such notice shall outline, as far as practicable, the matters to be considered. In cases of emergency, meetings may be called upon such notice less than fifteen (15) days as the circumstances will permit.

Quorum.--A majority of the members of the National Board shall constitute a quorum for any regular or special meeting.

Conduct of Meetings.--The Chairman of the National Executive Board shall preside at all meetings of the National Board at which he is present. In the absence of the Chairman of the National Executive Board he shall designate a member of the National Executive Board to preside.

Proxy Voting Forbidden.--Voting by proxy shall not be allowed at any meeting of the National Board; however, the Wing Commander may designate a Deputy within his Wing membership to represent him.

Minutes.--Full and complete minutes of all meetings shall be made and kept among the records of the corporation.

SECTION 6--Appeal Board

Any member of the National Board removed by the National Executive Board will have the right of appeal to an Appeal Board.

Composition.--The Appeal Board shall be composed of five Wing Commanders and a first and second alternate selected at the annual meeting of the National Board.

Terms and Powers.--The Appeal Board will serve for one year and shall function only with respect to the removal of the National Board, and the decision of such Board shall be final.

Conduct of Meetings.--The Appeal Board shall immediately elect a Chairman and all appeals shall be addressed to such Chairman, stating the grounds for such appeal, and upon receipt of such appeal the Chairman shall call a meeting of the Appeal Board within thirty (30) days and shall also notify the National Executive Board of the time and place of the meeting to allow the presentation of the grounds for the removal of the member of the National Board. In the absence of the Chairman his designee shall preside at meetings of the Appeal Board.

Quorum.--Five members of the Appeal Board shall constitute a quorum.

Voting.--Voting on all questions at Appeal Board meetings shall be in person and the majority vote of the five members present shall constitute a decisive vote.

SECTION 7--National Board Committees

The National Board and/or the National Executive Board shall have the power to constitute such standing and special committees, which may consist of their own members or otherwise, as they may respectively think the business or affairs of the corporation may from time to time require.

Each Committee appointed by the National Board or the National Executive Board shall elect its Chairman from among its members if a Chairman is not named when the Committee is appointed.

SECTION 8--National Executive Board

Composition.--The business of the corporation, when the National Board is not in session, shall be carried on and conducted by a National Executive Board to be composed of nine (9) members of the corporation, all of whom shall be members of the National Board, and whose office shall be at the National Headquarters of Civil Air Patrol. The National Executive Board shall select from its membership by majority vote a Chairman who shall serve for a period of one year or until his successor is selected and qualified.

Membership.--Upon ratification of the Constitution and By-Laws, the personnel of the existing Civil Air Patrol Board shall be and constitute the National Executive Board.

Powers.--The National Executive Board shall have and may exercise all of the powers of the National Board when the National Board is not in session.

Selection.--A member of the National Executive Board may be removed by and with the consent and approval of the majority of the National Executive Board.

Appointments to the National Executive Board shall be made from time to time from the membership as provided for in Section 8 hereof, by and with the consent and approval of the majority of the National Executive Board.

Meetings.--The National Executive Board shall meet at least once each quarter of each year at such times and places as the Chairman of the National Executive Board shall determine. The first meeting of the National Executive Board shall be held in Washington, D. C.

Special meetings may be held at any time upon the call of the Chairman of the National Executive Board.

Notices of all meetings shall be given to each member at least five (5) days prior to such meeting, and the notice shall outline as far as is practicable the matters to be considered.

Quorum.--Five (5) members of the National Executive Board shall constitute a quorum.

Conduct of Meetings.--The Chairman of the National Executive Board or his designee shall preside at all meetings of the National Executive Board.

Voting.--Voting on all questions at the National Executive Board meetings shall be in person and the majority vote of those present shall constitute a decisive vote.

Minutes.--Full and complete minutes of all meetings of the National Executive Board shall be taken and kept in suitable books at the National Headquarters of the corporation.

Rules, Orders, Directives, etc.--The National Executive Board shall have the power to adopt and issue directives for

the conduct of the business of the corporation in accordance with the provisions of the Act of Incorporation, Constitution and By-Laws of the corporation and in respect to all corporate matters not yet provided for in the By-Laws or by the rules adopted by the National Board.

SECTION 9--Branch Offices

Wing, Group, Squadron and Flight units may maintain branch offices for their respective units from time to time as the business of the respective units may require and as the finances of the units may permit.

The National Executive Board may create such offices for the corporation, in addition to the registered office, as the business of the corporation may from time to time require.

SECTION 10--Executive and Administrative Officers

The National Board and each Membership Unit of the corporation, for the purposes of carrying on the business affairs of the corporation, as distinguished from the technical operations of the organization, shall have three (3) Executive and Administrative officers as follows:--

- (a) Chief Executive Officer
- (b) Chief Financial Officer
- (c) Chief Secretarial Officer

National Executive and Administrative Officers.--The National Executive Board at its first meeting to be held in Washington, D. C., shall select from among its members three (3) persons, as outlined above, who shall be respectively:--

- (a) Chairman of the National Executive Board
- (b) Chief National Financial Officer
- (c) Chief National Secretarial Officer

The persons thus selected shall serve in such capacities until their successors are duly elected and qualified.

Thereafter the National Executive Board at its organization meeting each year shall select from its members three (3) persons, who shall respectively serve in such capacities for the period of one (1) year or until their successors are duly selected and qualified.

Vacancies in any of these offices shall be filled by the National Executive Board from its members for the unexpired term.

Wing Executive and Administrative Officers.--The Wing Commander, while serving as such, shall be the Chief Executive Officer of the Wing of which he is the Commander.

From the auxiliary officers of each Wing the Wing Commander shall from time to time appoint the Chief Financial Officer of the Wing and the Chief Secretarial Officer of the Wing.

Such appointments shall be on the fiscal year basis and each officer so appointed shall serve for the remainder of the fiscal year for which he is appointed or until his successor is duly appointed and qualified.

The Chief Executive Officer, with the Chief Financial Officer and the Chief Secretarial Officer of the Wing, shall constitute the Wing Executive Board, who shall direct and manage the corporate and business affairs of the Wing in between meetings of the general membership of the Wing.

Group Executive and Administrative Officers.--Wherever Group units exist the Group Commander, while serving as such, shall be the Chief Executive Officer of the Group of which he is the Commander.

From the auxiliary officers of each Group the Group Commander, by and with the consent and approval of the Wing in which the Group is a unit, shall from time to time appoint the Chief Financial Officer of the Group and the Chief Secretarial Officer of the Group.

Such appointments shall be on the fiscal year basis and each officer so appointed shall serve for the remainder of the fiscal year for which he is appointed or until his successor is duly appointed and qualified.

The Chief Executive Officer, with the Chief Financial Officer and the Chief Secretarial Officer of the Group, shall constitute the Group Executive Board, who shall direct and manage the corporate and business affairs of the Group in between the meetings of the general membership of the Group.

Squadron Executive and Administrative Officers.--The Squadron Commander, while serving as such, shall be the Chief Executive Officer of the Squadron of which he is the Commander.

From the auxiliary officers of each Squadron, the Squadron Commander, by and with the consent and approval of the Wing Commander and the Group Commander, if any, of the Wing and/or Group in which the Squadron is a unit, shall from time to time appoint the Chief Financial Officer of the Squadron and the Chief Secretarial Officer of the Squadron.

Such appointments shall be on the fiscal year basis and each officer so appointed shall serve for the remainder of the fiscal year for which he is appointed or until his successor is duly appointed and qualified.

The Chief Executive Officer, with the Chief Financial Officer and the Chief Secretarial Officer of the Squadron shall constitute the Squadron Executive Board, who shall direct and manage the corporate and business affairs of the Squadron in between the meetings of the general membership of the Squadron.

Flight Executive and Administrative Officer.--The Flight Commander, while serving as such, shall be the Chief Executive Officer of the Flight of which he is the Commander.

From the auxiliary officers of each Flight, the Flight Commander, by and with the consent and approval of the Wing Commander and the Squadron Commander, if any, of the Wing and/or Group in which the Flight is a unit, shall from time to time appoint the Chief Financial Officer of the Flight and the Chief Secretarial Officer of the Flight.

Such appointments shall be on the fiscal year basis and each officer so appointed shall serve for the remainder of the fiscal year for which he is appointed or until his successor is duly appointed and qualified.

The Chief Executive Officer, with the Chief Financial Officer and the Chief Secretarial Officer of the Flight shall constitute the Flight Executive Board, who shall direct and manage the corporate and business affairs of the Flight in between the meetings of the general membership of the Flight.

Chief Executive Officer--Duties.--The Chairman of the National Executive Board and likewise the Chief Executive Officer of the various units in the corporation within their respective units of activity shall be what their titles imply, namely, the Chief Executive Officers of the corporation, and as such, responsible for carrying into effect, within their respective areas, the business and corporate policies and programs adopted or approved from time to time by the National Board for the conduct and management of the business affairs of the entire organization.

They shall serve as the Chairman or Presiding Officer of all corporate and/or business meetings held within their respective areas by the units for which they are the Chief Executive Officers.

They shall be members, ex officio, of all corporation and business committees appointed or functioning within their respective areas or units.

They may appoint for their individual counsel and advice in administering the corporate and business affairs of the unit over which they preside such advisory and/or administrative committees, persons, or staffs as they think necessary or advisable.

They shall do everything within their power to promote the purposes and objects of the corporation and to see that all of the provisions of the Act of Incorporation and the Constitution and By-Laws of the corporation are complied with.

They shall assist and cooperate with the operating staffs of the respective units over which they preside in carrying out all operating programs.

They shall, to all intents and purposes, be the corporate Presidents of the units over which they preside, and as such, have all of the usual duties of such a position as far as the corporate and business affairs of their respective units are concerned, and the duty, as such, of developing, directing and supervising the technical operations of their unit.

All operating functions and responsibilities shall emanate from the office of the National Executive Board and through the orders, directives, manuals, rules, regulations, etc. issued directly or indirectly by National Executive Board and all matters pertaining to operations must be reported to and accounted for directly through channels to the office of the National Headquarters.

All corporate and business functions and responsibilities shall emanate from the Act of Incorporation and the Constitution and By-Laws of the corporation adopted pursuant thereto, and any orders, rules, regulations, etc. issued by the National Executive Board pursuant thereto, and all corporate and business matters must be handled through channels to the National Board and the Chairman of the National Executive Board.

Operations are at all times to take precedence. The primary function of the corporate and business organization at all times is to promote and support the operating programs.

The Chief Executive Officer therefore shall at all times do any and all things necessary to coordinate the corporate and operating functions of the organization.

Chief Financial Officer--Duties.--The Chief Financial Officer of the National Executive Board and likewise the Chief Financial Officer of each of the various units in the corporation

within their respective units of activity shall have the care and custody of all the funds of the corporation.

They shall keep books of account, open at reasonable times for the inspection of members having a valid corporate reason for inspecting same.

They shall operate all bank accounts established by the Executive Board of the unit in which they are serving.

They shall have the power to endorse checks, drafts, or other instruments for payment to the unit when necessary or proper and to deposit same to the credit of the unit in such depositories as the Executive Board of the unit may from time to time designate as such.

They shall deposit all funds in the name of the Civil Air Patrol unit.

They may sign all receipts and vouchers for payments made to the unit.

They shall execute, subject to endorsement by the Chief Executive Officer, or, in his prolonged absence or incapacity to act, by the Chief Secretarial Officer, all checks or orders for the withdrawal of funds issued by the unit for the payment of just charges incurred by or due by the unit.

They shall enter in the books to be kept by them for that purpose full and adequate account of all moneys received and paid out by them for the account of the unit.

They shall render periodic reports and accountings of all of their transactions to the Executive Board of the unit in which they are serving and as of April 1 of each fiscal year they shall prepare a full and complete report of all of their transactions for the preceding fiscal year, which after review by the Executive Board, is to be forwarded to the Executive Board of the larger unit or units of which their unit is a member so that the required annual report of the entire organization may be prepared as required by the Act of Incorporation and as set forth in Section 12 of these By-Laws.

They shall, to all intents and purposes, be the corporate Treasurers of the units within which they are serving, and as such, have all of the usual duties and responsibilities of such a position as far as the corporate and business affairs of their respective units are concerned and such other additional duties as may be assigned them by the Chief Executive Officers from time to time.

Chief Secretarial Officers--Duties.--The Chief Secretarial Officer of the National Executive Board and likewise the Chief Secretarial Officer of each of the various units in the corporation within their respective units of activity shall keep minutes of all meetings of the Executive Boards of their respective units and of all meetings of the general membership or units, if any, comprising their respective unit and shall keep or cause to be kept minutes of all official committees appointed by the Executive Board of which they are a member.

They shall have the custody of the minutes and records of their respective unit.

They shall attend to the giving of all notices for all meetings of the Executive Board, general membership and all official committees appointed by the Executive Board of which they are a member.

The Chief Secretarial Officer of the National Executive Board shall have charge of the Seal of the corporation and shall attest the Seal of the corporation, upon all instruments executed by the Chairman of the National Executive Board or other authorized official when under Seal.

They shall to all intents and purposes be the corporate secretaries of the units within which they are serving, and as such, have all of the usual duties and responsibilities of such a position, as far as the corporate and business affairs of their respective units are concerned.

Assistant Officers.--All groups or officers having the power to appoint Chief Financial Officers and Chief Secretarial Officers shall also have the power to appoint one (1) or more Assistant Chief Financial Officers and/or one (1) or more Assistant Chief Secretarial Officers who, in the absence or disability, or at the request of the Chief Financial Officer or of the Chief Secretarial Officer, respectively, may perform the duties of the Chief Financial Officer or of the Chief Secretarial Officer respectively, and/or such other duties as may from time to time be delegated to him by the appointing group or officer.

The same conditions and requirements for holding office shall be required of Assistant Officers as is required of the regular officers.

Auxiliary Officers.--The National Executive Board and the Executive Board of any Wing or Group may appoint such auxiliary corporate executive officers, such as a counsel, an auditor, and the like, to serve on a fiscal year to year basis within the area covered by the unit within which they are appointed.

All such corporate officers must coordinate their activities with the activities of the Board by which they are appointed and corporate officers of the same type within the national organization.

They shall advise with the Board by which they are appointed on such matters as may be referred to them.

Executive Boards.--The Executive Board of each Wing, Group, Squadron or Flight shall be the Chief Executive Officer, Chief Financial Officer and Chief Secretarial Officer of the unit.

As a group they shall constitute the corporate Executive Board of the unit and shall carry on the usual functions of a corporate Executive Board in between meetings of the general membership and/or units of the unit in which they are serving.

Term of Office.--Except as hereinabove specifically provided, no corporate officer shall be appointed for a longer term than one (1) fiscal year or until his successor is duly appointed and qualified.

Removal.--All officers of the corporation shall be subject to removal by the incumbents of the unit or officer having the power to appoint them.

SECTION 11--Funds and Property

The corporation, or any of its component units, may receive gifts, bequests, devises, legacies and donations for such purposes as are within the general scope of its corporate objects and purposes.

The National Board, if it so desires, may create a National Endowment Fund consisting of gifts, bequests, devises, legacies and other donations specifically received for such purposes by the terms of which the principal is directed or specified to be retained as principal and invested and reinvested as such.

All moneys, property and income of any kind received by the National Headquarters of the corporation from any source except such items as may be specifically earmarked as Endowment Funds shall be considered as received and held in the General Funds of the corporation.

All funds of the National Headquarters of the corporation shall be deposited in such bank or banks or other financial institutions as may be designated by the National Board or the National Executive Board for the purpose subject to withdrawal for proper corporate purposes upon such regulations as the National Board or the National Executive Board may from time to time prescribe therefor.

All moneys, property and income of any kind received by the office of any particular unit of the corporation from any source except such items as may be specifically received for the National Headquarters or the office of any other unit shall be received in the name of the Civil Air Patrol unit and held in the General Funds of the unit so receiving the same.

All funds of any unit shall be deposited in such bank or banks or other financial institutions as may be designated by the proper officers in the name of the Civil Air Patrol unit for the purpose subject to withdrawal for proper purposes upon such regulations as the board of the unit may from time to time prescribe therefor.

All transactions in moneys, property, income and/or Endowment Funds or otherwise shall be fully reported in the annual reports of the office or units handling same throughout a year.

SECTION 12--Records

The national office and the office of each unit of the corporation shall procure and maintain at all times the following records:-

- (a) **Minute Book** or books for the recording and filing of the minutes of all official business meetings of the general membership, governing bodies, staffs, committees or special bodies formed to carry out any corporate purpose.
- (b) **Books of Account** within which to record all receipts of property, moneys, income and the like of any kind and from whatever source, together with records of all disbursements or dispositions of the same.
- (c) **Membership Register** - in either book, loose leaf or card form showing all pertinent information as to each member of the unit or organization within the jurisdiction of the office maintaining same.
- (d) **Order, Directive and Regulation Files** in which shall be entered all orders, directives, regulations, manuals and/or all other documents of such types received and/or issued by or through the office maintaining same.
- (e) **Local Auxiliary Records** - in which shall be recorded full and complete records of all activities of the unit

maintaining same - including publicity files, attendance records, performance records, etc.

- (f) **Correspondence Files** - in which all incoming correspondence and copies of all outgoing correspondence shall be filed in an orderly manner for such reference as may be required from time to time.

SECTION 13--Reports

The unit commanders of each Group, Squadron and Flight on or before January 31 of each year shall make a full and complete report to their Wing Commander through normal unit channels of all operations conducted by their respective units for the twelve (12) months ending December 31 immediately preceding.

These reports shall show the number of members in the unit at the beginning and at the end of the period; the type, extent and amount of training work performed; the type and extent of active duty assignments performed; any special or outstanding assignments performed; a brief statement of the financial operations of the unit; and a general resume of the condition of the unit as of December 31.

Each Wing Commander upon receipt of the above described reports from the units within their command on or before March 1 of each year shall make a full and complete report to the National Executive Board of all operations conducted by their Wing for the twelve (12) months ending December 31 immediately preceding, the said report to include a tabulation and summary of the reports from the units within their command, with such additional material as will set forth the operations of the Wing within the period covered.

The National Executive Board upon receipt of the above described reports shall prepare on or before April 1 a full and complete written report of all activities of the organization for the preceding year and submit copies of the same to all members of the National Board so that they, in turn, pursuant to Article X of the Constitution may make such additions or changes therein if necessary, at the annual meeting of the National Board and transmit final copies of same, as prescribed in the Act of Incorporation, to the President and to every member of the Congress of the United States and to such other officers of the Government as may be concerned therewith, and to such members of the corporation as may desire same.

SECTION 14--Insignia

The National Board may develop and appoint such insignia, uniforms, emblems and badges, descriptive and designating marks, and words or phrases for use by the members of the organization, not in conflict with any directives issued by the Departments of the Federal Government, as they may consider necessary or advisable in carrying out the purposes and objects of the corporation.

All such matters, when fully approved by proper authority, shall be announced to the membership from time to time through proper directives issued through the unit commanders.

Every person upon becoming a member of the organization shall receive a card or other evidence of membership for use in identification as a bona fide member of the organization. Such cards or other evidences of membership may be distributed by the National Executive Board to the units as the National Board may from time to time prescribe.

SECTION 15--Amendments to By-Laws

These By-Laws may be amended, repealed or changed by the decisive vote at any regular or special meeting of the National Board or a majority of the members of the National Board present at any such meeting, provided written notice is given to all members of the National Board twenty (20) days prior to such proposed action.

SECTION 16--Effective Date

The Constitution and these By-Laws shall be effective upon adoption by a majority of the incorporators, or their successors, granted a charter for the incorporation of Civil Air Patrol in Public Law 476, 79th Congress.

Ratified and Adopted 28 May 1948

BE IT RESOLVED:

That the Civil Air Patrol, a corporation duly incorporated under special enactment by the Congress of the United States

of America, acting by and through its duly qualified, acting and authorized National Board, shall until otherwise determined by the corporation invest the Secretary of the Air Force or his designee, who shall be a regular Air Force general officer, with all of the powers, duties and privileges now enjoyed by the National Board and the National Executive Board of the Civil Air Patrol, with the following provisions:

That nothing in this delegation shall preclude the exercise of rights set out in Section 6 of the By-Laws of this corporation;

That the National Board and the National Executive Board shall be used and recognized as advisory bodies;
That nothing in this delegation of said powers and duties shall prevent the meeting of the National Board or National Executive Board for any purpose including the right to meet and act to modify or end such delegation as herein set out.

FURTHER RESOLVED, that this Resolution become a part of the Constitution and By-Laws of the Civil Air Patrol corporation.

Adopted 28 May 1948
(Date)

WEARING THE UNIFORM - CAP

WINTER

MALE



OFFICER PERSONNEL -
Trousers, Pink Elastic;
Battle Jacket and
Flight Cap, Green
Elastic



ENLISTED PERSONNEL -
Battle Jacket and
Flight Cap, Wool,
Olive Drab (OD)

FEMALE



OFFICER PERSONNEL -
Skirt, Pink Elastic;
Blouse and Flight
Cap, Green Elastic



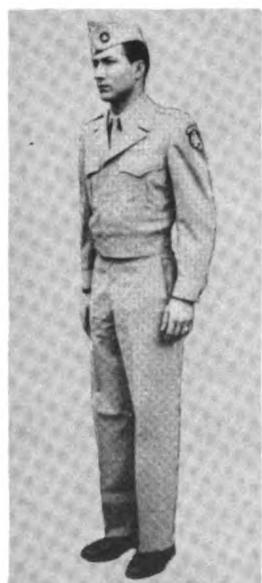
ENLISTED PERSONNEL -
Skirt with shirt worn
as outer garment,
Wool, Olive Drab (OD)

SUMMER

MALE



OFFICER PERSONNEL -
Battle Jacket and
Flight Cap - Tropical
Worsted



ENLISTED PERSONNEL -
Battle Jacket and
Flight Cap,
Tropical Worsted

FEMALE



OFFICER PERSONNEL -
Skirt, Blouse and
Flight Cap-
Tropical Worsted



ENLISTED PERSONNEL -
Skirt with Shirt worn
as outer garment,
Tropical Worsted

WEARING THE UNIFORM - CAP CADETS

WINTER

MALE



OFFICER PERSONNEL -
Trousers, Battle
Jacket and Flight
Cap - Wool, Olive
Drab



ENLISTED PERSONNEL -
Trousers, Shirt and
Flight Cap, Wool, (OD)

FEMALE



OFFICER PERSONNEL -
Skirt, Blouse and
Flight Cap - Wool,
(OD)



ENLISTED PERSONNEL -
Skirt, Shirt and
Flight Cap - Wool,
(OD)

SUMMER

MALE



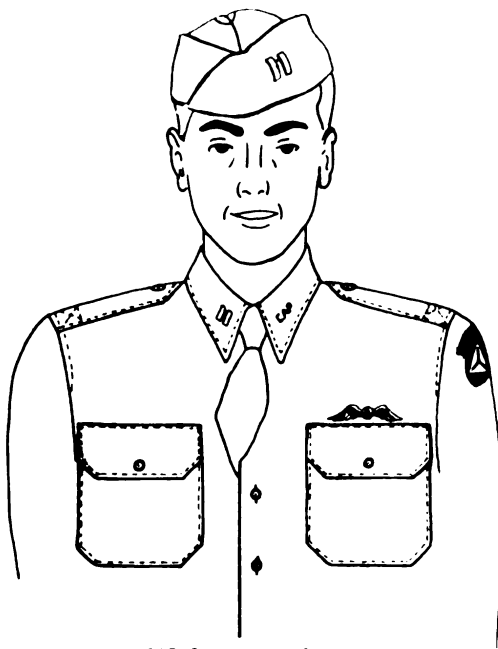
ENLISTED PERSONNEL -
Trousers, Shirt and
Flight Cap - Khaki

FEMALE

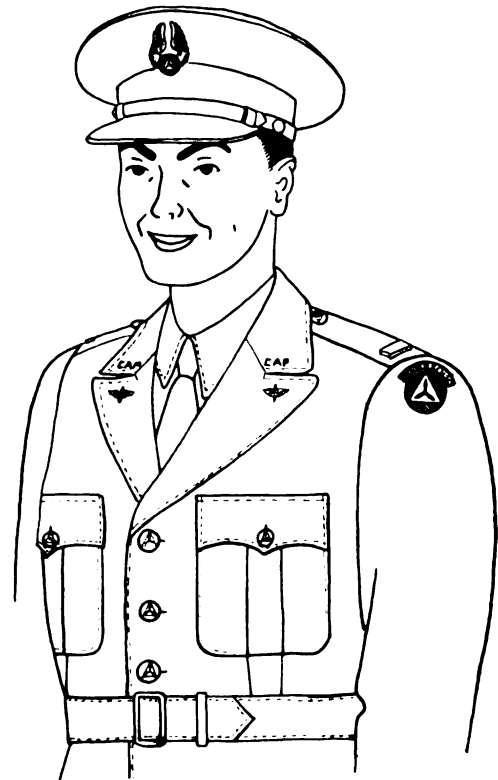


ENLISTED PERSONNEL -
Skirt, Shirt and
Flight Cap - Khaki

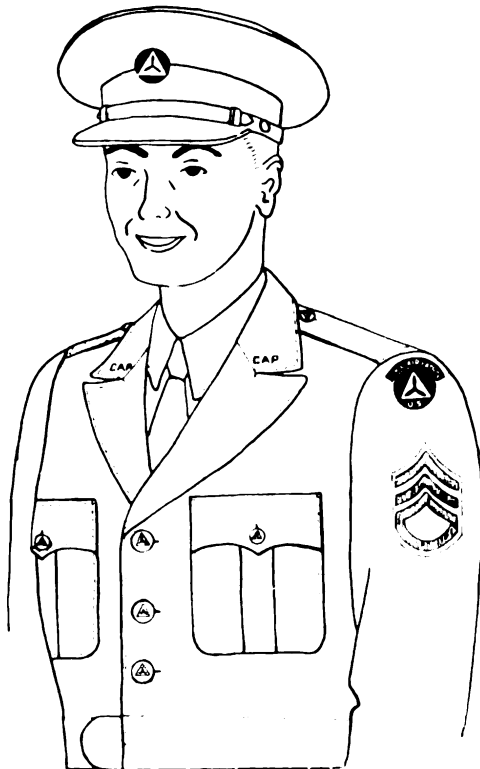
WEARING THE UNIFORM - CAP



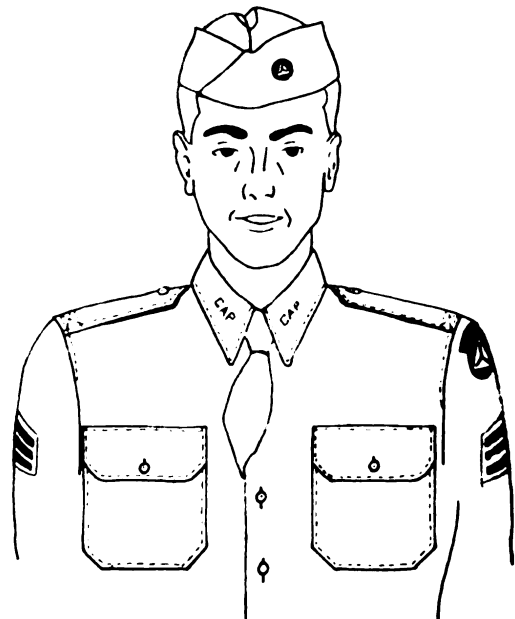
CAP Officer - Captain



CAP Officer - Lieutenant



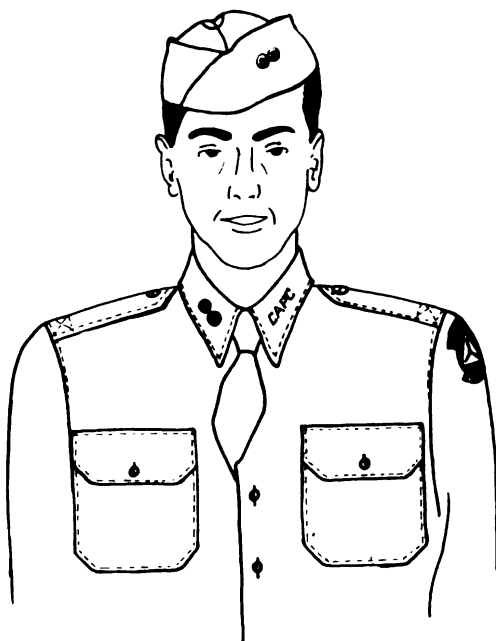
CAP Non Commissioned Officer - Staff Sergeant



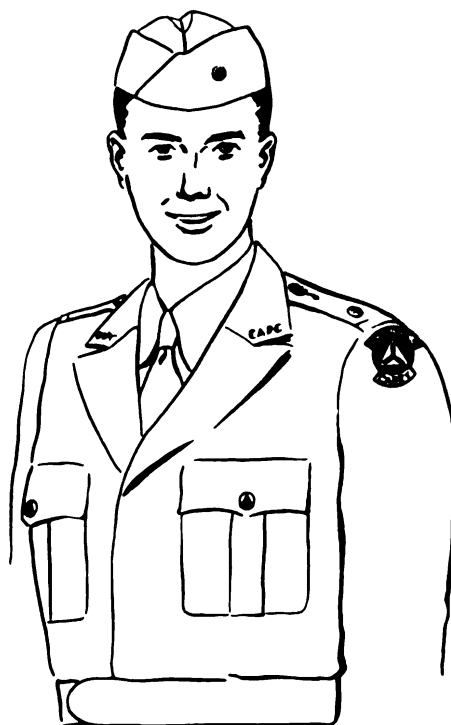
CAP Non Commissioned Officer - Sergeant

(INSIGNIA ON BLOUSE OR BATTLE JACKET, AND SHIRT WHEN WORN AS AN OUTER GARMENT)

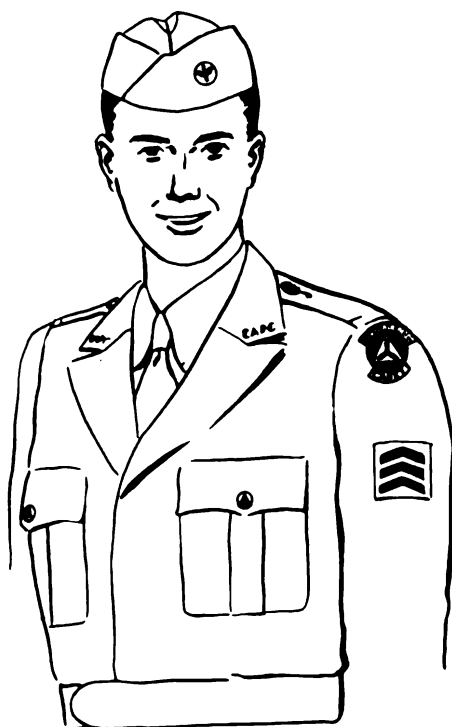
WEARING THE UNIFORM - CAP CADETS



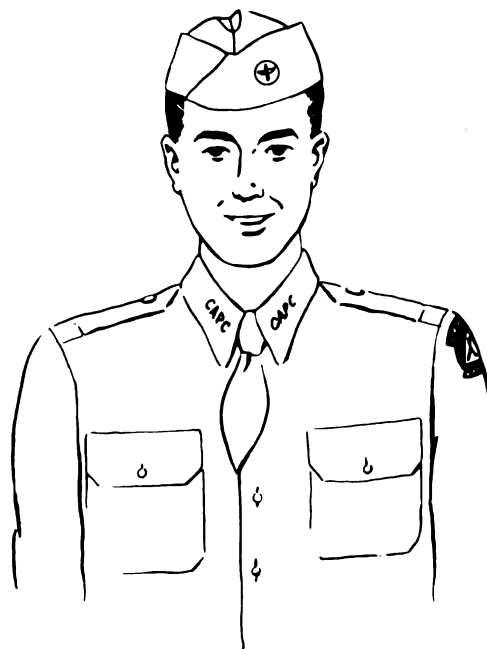
Cadet Officer - 1st Lieutenant



Cadet Officer - 2nd Lieutenant



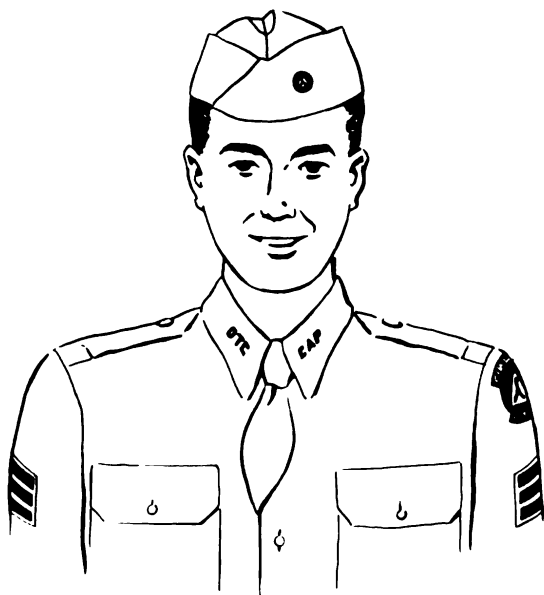
Cadet Non Commissioned Officer - Sergeant



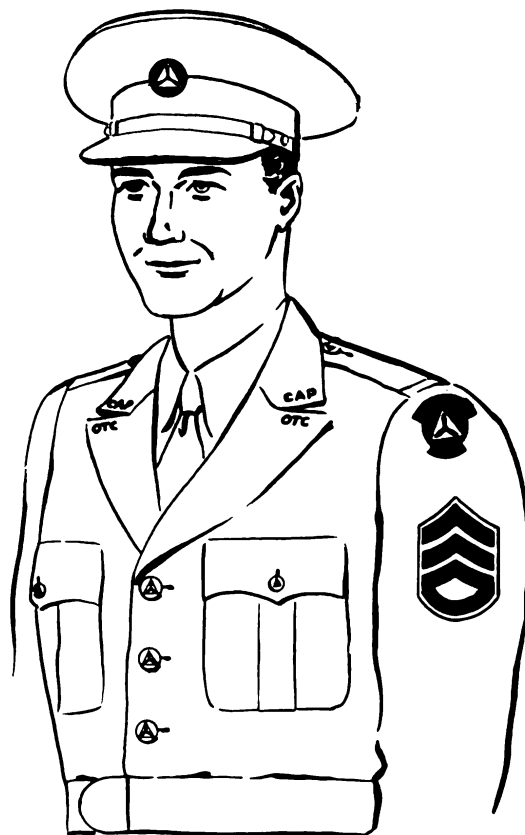
Cadet Member without rank or grade

(INSIGNIA ON BLOUSE OR BATTLE JACKET, AND SHIRT WHEN WORN AS AN OUTER GARMENT)

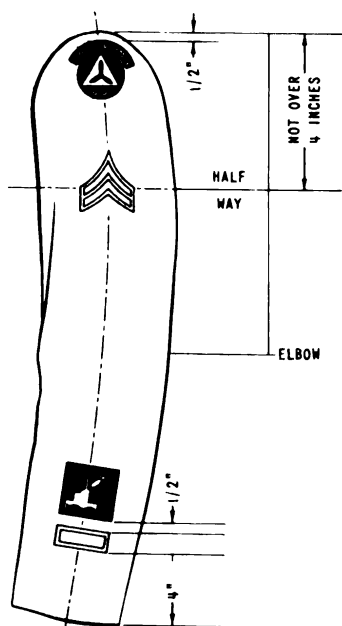
WEARING THE UNIFORM



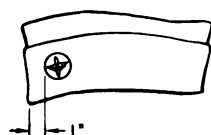
OTC Non Commissioned Officer - Sergeant



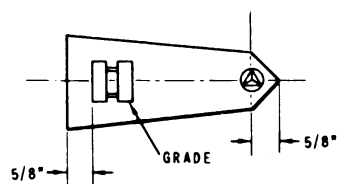
OTC Non Commissioned Officer
Staff Sergeant



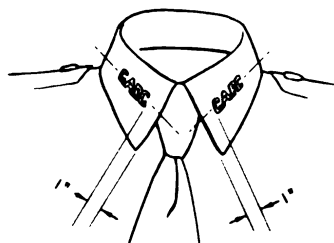
Insignia on the Sleeve



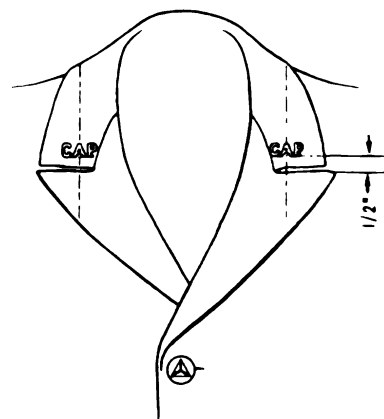
Insignia on the Cap



Insignia on the Shoulder Loop



Insignia on the Collar



Insignia on the Lapel

PRESCRIBED ITEMS OF UNIFORM

TABLE I - MALE OFFICERS AND AIRMEN

1. Cap, garrison, cotton, khaki, Officer (Optional).....	\$0.78
2. Cap, garrison, khaki64
3. Cap, garrison, wool, od	1.93
4. Cap, garrison, wool, serge, od, Shade 33, Officer (Optional)	1.45
5. Cap, garrison, wool, elastique, od, dark, Shade 51, Officer (Optional)	1.93
6. Cap, service, fur, felt, od	9.79
7. Cover, cap, service, wool, elastique, od (Shade 51)	1.57
8. Coat, wool, elastique, dark, od, M-1944, Shade 51	29.42
9. Cover, cap, service, uniform twill, 8.2 oz., khaki79
10. Cover, cap, service, wool, serge, od (Shade 33)	2.62
11. Frame, cap, service	4.05
12. Jacket, field, wool, od (officer type) (Optional)	22.51
13. Jacket, field, wool, od (EM type)	14.30
14. Jacket, wool, od (Shade 33) (Optional)	16.99
15. Necktie, cotton, mohair, khaki (Shade 6)30
16. Overcoat, field, OD-7, w/detachable lining, Officer's	40.25
17. Overcoat, wool, od	19.40
18. Raincoat, officers', double texture	16.82
19. Raincoat, rubberized, M-1938, dismounted	4.55
20. Shirts, cotton, khaki	2.71
21. Shirts, poplin, khaki, stand-up collar, 6 oz	2.09
22. Shirts, cotton, khaki, stand-up collar, 8.2 oz	4.15
23. Trousers, cotton, khaki	4.01
24. Trousers, field, officer's, wool, serge, od (Shade 33) (Optional)	10.55
25. Trousers, field, wool, serge, od (Shade 33)	8.63
26. Trousers, wool, elastique, drab, officer's, M-1944 (Shade 54) (pink)	11.13

TABLE II - FEMALE OFFICERS AND ENLISTED WOMEN

1. Cap, garrison, tropical worsted, khaki, women's	1.52
2. Cap, garrison, wool, od, officer's, women's	2.43
3. Cap, garrison, wool, od, Shade 37, women's	1.83
4. Gloves, leather, dress, women's	1.93
5. Jacket, wool, od, women's, officer's	17.86
6. Jacket, women's, tropical worsted, khaki	13.21
7. Jacket, women's, wool, od, Shade 37	15.54
8. Necktie, cotton, mohair, khaki33
9. Overcoat, field, women's	26.16
10. Raincoat, parka type, women's	9.93
11. Skirt, summer, women's tropical worsted, khaki	5.55
12. Skirt, women's wool, od, Shade 37	3.97
13. Skirt, wool, drab, light shade, women's	4.85
14. Waist, cotton, women's	1.84

CAP INSIGNIA



SHOULDER PATCH



SHOULDER PATCH



CAP DISC - CLOTH



DISTINGUISHED

EXCEPTIONAL
SERVICE AWARDS

MERITORIOUS



BLUE

WHITE
SERVICE RIBBONS

RED



CAP DISC - METAL



CAP
OTC

COLLAR INSIGNIA - METAL CUT OUT

LAPEL INSIGNIA
CIVILIAN DRESS

CAP INSIGNIA



COMMAND PILOT WINGS



SENIOR PILOT WINGS



PILOT WINGS



GLIDER PILOT WINGS



OBSERVER WINGS



SENIOR OBSERVER WINGS



LARGE BUTTONS
SILVER



CAP INSIGNIA OFFICER - METAL



SMALL BUTTONS
SILVER

CADET GRADES



CADET - PFC



CADET - CORPORAL



CADET SERGEANT



CADET FIRST SGT.

ACTIVE DUTY SERVICE



COASTAL PATROL



SOUTHERN LIAISON PATROL



FOREST PATROL



MISSING AIRCRAFT SEARCH



COURIER SERVICE

TECHNICAL SPECIALISTS



MUSICIAN



RADIO



TRANSPORTATION

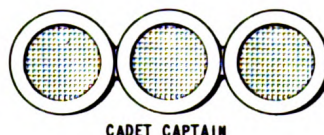
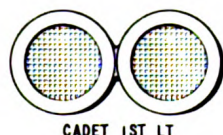
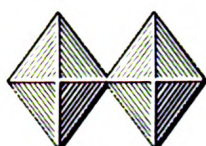


MECHANIC



PHOTOGRAPHY

CAPC INSIGNIA



CADET MERIT RIBBONS



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